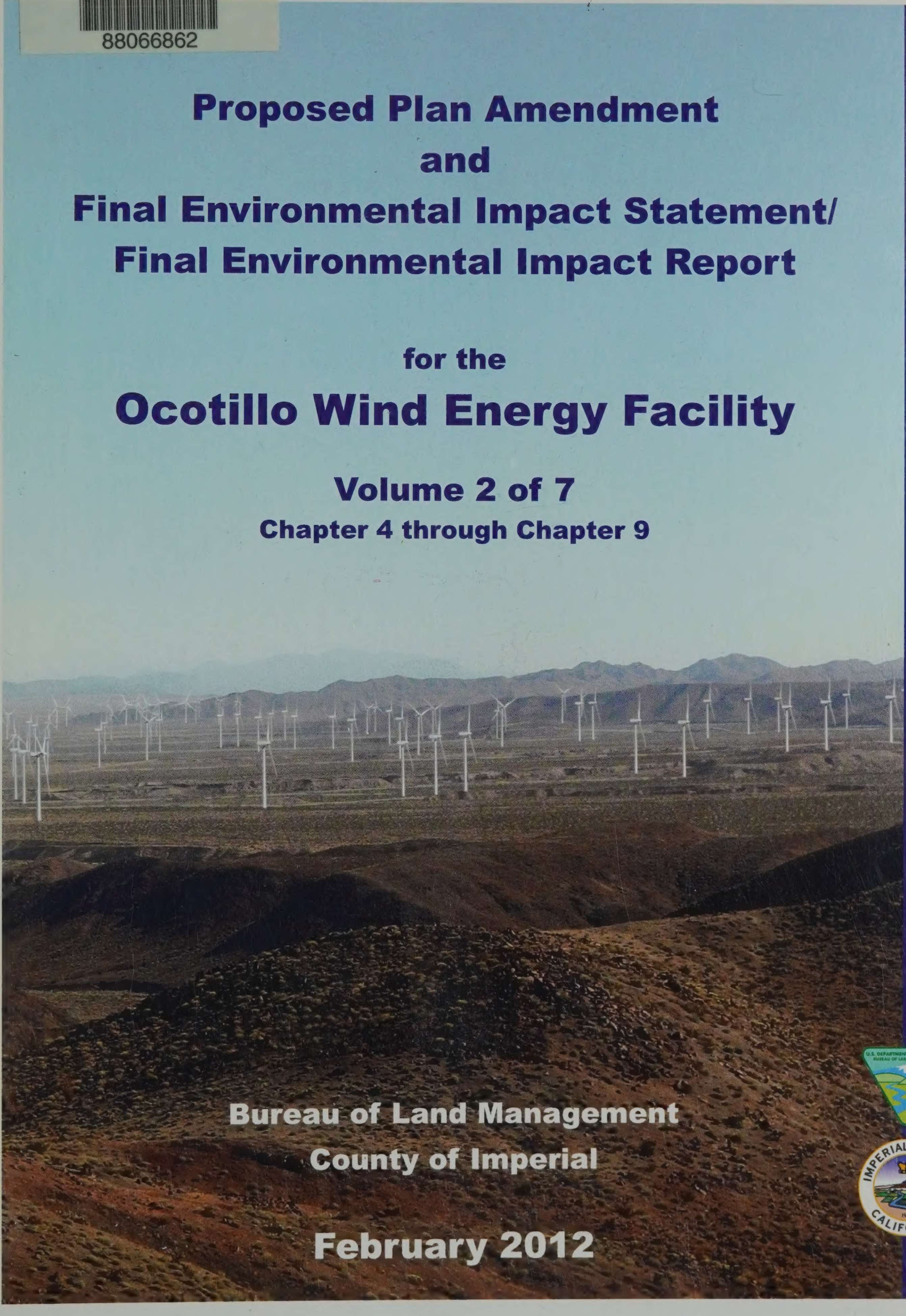
BLM LIBRARY
88066862



Proposed Plan Amendment and Final Environmental Impact Statement/ Final Environmental Impact Report

for the

Ocotillo Wind Energy Facility

Volume 2 of 7

Chapter 4 through Chapter 9

BLM

Bureau of Land Management
County of Imperial

February 2012

#900886258

ID 88066862

HD
243
.C2
O368
2012
V.2

TABLE OF CONTENTS

Volume 2

4. **Environmental Consequences**

4.1 Introduction
4.2 Air Resources
4.3 Climate Change
4.4 Cultural Resources
4.5 Environmental Justice
4.6 Lands and Realty
4.7 Mineral Resources
4.8 Multiple Use Classes
4.9 Noise
4.10 Paleontological Resources
4.11 Public Health and Safety
4.12 Recreation
4.13 Social and Economic Issues
4.14 Soil Resources
4.15 Special Designations
4.16 Transportation and Public Access
4.17 Vegetation Resources
4.18 Visual Resources
4.19 Water Resources
4.20 Wildland Fire Ecology
4.21 Wildlife Resources
4.22 Irreversible and Irretrievable Commitments of Resources
4.23 Short-term Uses and Long-term Productivity
4.24 Growth-inducing Impacts

5. **Consultation, Coordination, and Public Involvement**

6. **Acronyms and Abbreviations**

7. **Glossary**

8. **References**

9. **Index**

BLM Library
Denver Federal Center
Bldg. 85, OC-521
P.O. Box 25047
Denver, CO 80225

4.1 Introduction

This chapter assesses environmental consequences or impacts that would result from the implementation of the Proposed Action or the alternatives described in Chapter 2. These analyses consider direct, indirect, and cumulative impacts of the Proposed Action and alternatives, including both short-term impacts during construction and decommissioning, and long-term impacts during operations. This chapter also identifies mitigation measures to address adverse impacts and summarizes the residual and unavoidable adverse impacts on an issue-by-issue basis. The scope of the impact analyses presented in this chapter is commensurate with the level of detail for the alternatives provided in Chapter 2, Proposed Action and Alternatives, and the availability and/or quality of data necessary to assess impacts. Baseline conditions for assessing the potential environmental impacts are described in Chapter 3.

The methodology for this assessment conforms with the guidance found in the following sections of the Council on Environmental Quality (CEQ) regulations for implementing NEPA: 40 Code of Federal Regulation (CFR) Section 1502.24, *Methodology and Scientific Accuracy*; 40 CFR Section 1508.7, *Cumulative Impact*; and 40 CFR Section 1508.8, *Effects*. The CEQ regulations require agencies to "rigorously explore and objectively evaluate" the impacts of the alternatives. The methodologies used in the impact assessment also conform to the requirements of the CEQA, Public Resources Code Section 21000 et seq.), including the *Guidelines for Implementation of the CEQA*, Title 14 California Code of Regulations section 15000 et seq.

4.1.1 Analytical Assumptions

The following impacts analysis was conducted with the following assumptions:

- The laws, regulations, and policies applicable to the BLM authorizing ROW grants for renewable energy development facilities would be applied consistently for all action alternatives.
- The proposed facility would be constructed, operated, maintained, and decommissioned as described in each action alternative.
- Short-term impacts are those expected to occur during the construction phase, the first five years of the operation and maintenance phase, and during project decommissioning. Long-term impacts are those that would occur after the first five years of operation.

4.1.2 Types of Effects

The potential impacts from those actions that would have direct, indirect, and cumulative effects were considered for each resource. The terms "effect" and "impact" as used in this document are synonymous and could be beneficial or detrimental.

Direct effects are caused by the action and occur at the same time and place as the action; indirect effects are caused by the action and occur later in time or further in distance, but are still reasonably foreseeable (40 CFR 1508.8). Cumulative impacts are those effects resulting from the incremental impacts of an action when combined with other past, present, and reasonably foreseeable future actions (regardless of which agency or person undertakes such actions) (40 CFR 1508.7). Cumulative impacts could result from individually insignificant but collectively significant actions taking place over a period of time. Short-term impacts occur only for a short time after implementation of a management action; for example, construction noise impacts from construction activities would be considered short term in nature. By contrast, long-term effects occur for an extended period after implementation of a management action; for example, operational noise during facility operations would be a long-term impact, as it would last for as long as the facility is in operation.

Section 1502.16 of the CEQ regulations forms the scientific and analytic basis for the comparisons of alternatives. This chapter consolidates the discussions of those elements required by sections 102(2)(C)(i), (ii), (iv), and (v) of NEPA which are within the scope of this EIS/EIR, and as much of Section 102(2)(C)(iii) as is necessary to support the comparisons. The discussion includes the environmental impacts of each of the alternatives, including any adverse environmental effects which cannot be avoided, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.

4.1.3 Resources and Resource Uses Not Affected or Present in the Action Area

Resources, BLM program areas, or other aspects of the human environment that are not affected or present in the OWEF area include: wild and scenic rivers; national scenic or historic trails, monuments, and national recreation areas; cooperative management and protection areas; outstanding natural areas; forest reserves; back country byways; wetlands; livestock grazing; and wild horses and burros.

4.1.4 Mitigation Measures Included in the Analysis

Under NEPA, significance is defined by the Council on Environmental Quality (CEQ) (Section §1508.27) as a measure of the intensity and context of the effects of a major federal action on the human environment. The BLM NEPA Handbook reiterates this directive, stating that the document should "focus the discussion of effects on the context, intensity, and duration." Intensity refers to the severity or level of magnitude of impacts. Public health and safety, proximity to sensitive areas, level of controversy, unique risks, or potentially precedent-setting effects may all be considered in determining intensity of effect. Context means that the effects of an action must be analyzed within a framework or within physical or conceptual limits. Whenever possible, this document differentiates between short-term and long-term impacts.

Unlike NEPA, CEQA requires that a significance determination be made for each adverse impact identified in an EIR. Significance criteria, the basis for which is set forth in the CEQA Guidelines Environmental Checklist (Appendix G), are identified for each environmental resource area. The significance criteria serve as a benchmark for determining if a project would result in significant adverse environmental impacts when evaluated against the baseline or existing environmental conditions. Impacts are assessed relative to each impact criterion to determine whether the project would have no impact, a less-than-significant impact, less than significant with mitigation, or a significant impact. Impacts are quantified to the extent possible. In addition, the determination of an impact's significance is derived from standards set by regulatory agencies on the federal, State, and local levels; knowledge of the effects of similar past projects; professional judgment; and plans and policies adopted by governmental agencies.

CEQA requires that mitigation measures be identified to reduce or avoid significant impacts.

Both Section 1508.20 of the CEQ regulations for implementing NEPA and the State CEQA Guidelines §15370 define mitigation as:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action;

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

(e) Compensating for the impact by replacing or providing substitute resources or environments.

If impacts remain significant after all feasible mitigation is considered, i.e., continue to exceed the threshold of significance identified in the impact criteria, the analysis concludes that the impact is significant and unavoidable.

For impacts identified in the following resource sections, mitigation measures have been developed that would be implemented during all appropriate phases of the project from initial ground breaking to operations, and through closure and decommissioning. The mitigation measures include a combination of the following:

- Measures that have been proposed by the Applicant;
- Regulatory requirements of other federal, state, and local agencies; and
- Additional BLM-proposed mitigation measures, standard ROW grant terms and conditions, and best management practices (BMPs).

These requirements are generically referred to as "mitigation measures" throughout this PA and Final EIS/EIR. Because these mitigation measures are derived from a variety of sources, they also are required, and their implementation regulated, by the various agencies.

Many of the mitigation measures are required by agencies other than the BLM, and their implementation will be enforced by those other agencies against the Applicant. For instance, the Endangered Species Act (ESA) Section 7 mitigation measures of the USFWS will be included in the Record of Decision (ROD), and the National Historic Preservation Act (NHPA) Section 106 mitigation measures will include a number of processes that also will be included in the ROD. The Applicant will be required by the ROD and the ROW grant to comply with the requirements of those other agencies (see, e.g., 43 CFR 2805.12(a) (Federal and state laws and regulations), (i)(6) (more stringent state standards for public health and safety, environmental protection and siting, constructing, operating, and maintaining any facilities and improvements on the ROW). Any non-compliance with implementation of these other Federal or state requirements may affect the approval status of the ROD and ROW grant.

In some instances, the BLM identified potential impacts to public land resources that would not otherwise be the subject of mitigation measures required by these other agencies. In these instances, individual mitigation measures have been developed by the BLM. If a ROW is granted, these mitigation measures may be incorporated into the ROW grant and, if so, will be monitored and managed by the BLM. In addition, standard terms and conditions for approval of the use of public land will be identified in the ROD and incorporated into the proposed ROW grant and therefore will be enforced by the BLM as part of any ROW grant approved for the project.

4.1.5 Cumulative Scenario Approach

This PA and Final EIS/EIR analyzes the cumulative impact of the construction, operation and maintenance, closure and decommissioning of the elements of the Proposed Action, taking into account the effects in common with other past, present, and reasonably foreseeable future actions. The cumulative effects analysis highlights past actions that are closely-related either in time or space (i.e., temporally or in geographic proximity) to the Proposed Action, present actions that are ongoing at the same time this EIS/EIR was being prepared; and reasonably foreseeable future actions, including those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends.

The intensity, or severity, of the cumulative impacts analysis considers the magnitude, geographic extent, duration, and frequency of the effects (CEQ, 1997). The magnitude of the effect reflects the relative size or amount of the effect; the geographic extent considers how widespread the effect may be; and the duration and frequency refer to whether the effect is a one-time event, intermittent, or chronic (CEQ, 1997). Varying degrees of information exist about projects within the cumulative scenario. Therefore, for resource areas where quantitative information was available, a quantitative analysis is provided; however, if said level of detail was not available, a qualitative analysis is provided. If the Proposed Action and alternatives would have no direct or indirect effects on a resource, the PA and Final EIS/EIR does not analyze potential cumulative effects on that resource. See, for example, Section 4.1.3, Resources and Resource Uses Not Affected or Present in the Action Area.

Table 4.1-1 (located at the end of this section) provides a comprehensive listing of all foreseeable projects that could contribute to a cumulative impact on the environment. Projects listed include renewable energy projects located on BLM-administered lands and/or private lands, other BLM actions/activities, and projects identified by local governments, such as Imperial County and San Diego County. Table 4.1-1 presents the project name and owner, location, type, status, total acres, and a brief description of each project, to the extent available. Most of the projects listed in Table 4.1-1 have been, are being, or would be required to undergo their own independent environmental review under NEPA or CEQA or both, as applicable. Figures 4.1-1a/b show the location of each of the projects listed in Table 4.1-1 using a corresponding identification number. Those projects where the identification number shown as an asterisk (*) are outside the area covered by Figures 4.1-1a/b.

For the Proposed Action, the cumulative scenario for each issue area includes all or a portion of the projects identified in Table 4.1-1. Table 4.1-2 (located at the end of this section) identifies each resource or BLM program area, the cumulative analysis impact area (which is the geographic extent for each cumulative effects resource/issue), elements to consider, and which renewable projects, other BLM-authorized actions and other known and reasonably foreseeable actions or activities that are located or would occur within the cumulative analysis impacts area.

With the exception of climate change, which is a global issue, the BLM has identified the California desert as the largest area within which cumulative effects should be assessed. However, within the desert region, the specific area of cumulative effect varies by resource. For each resource, the geographic scope of analysis is based on the topography surrounding the OWEF and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects often extends beyond the scope of the direct effects, but not beyond the scope of the direct and indirect effects of the

Proposed Action and alternatives. Table 4.1-2 identifies the relevant geographic scope for each discipline's analysis of cumulative impacts.

In addition, each project in a region would have its own implementation schedule, which may or may not coincide or overlap with the Proposed Action's schedule. This is a consideration for short-term impacts from the proposed OWEF. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the proposed OWEF.

Renewable Energy Projects Included in the Cumulative Scenario

A large number of renewable energy projects have been proposed on BLM-administered land, State land, and private land in California. As of February 2011, there were 291 renewable projects totaling 31,375 MW proposed in California in various stages of the environmental review process or under construction (CEC, 2011). Of these 291 renewable projects, 18 projects have been proposed in BLM's California Desert District; these projects are identified in Table 4.1-1 (see those identified by footnote number 1 in the "Project Type" column).

Large renewable projects now described in applications to the BLM and on private land are competing for utility Power Purchase Agreements, which will allow utilities to meet State-required Renewable Portfolio Standards. Not all of the projects listed will complete the environmental review process, and not all projects will be funded and constructed. It is unlikely that all of these projects will be constructed for the following reasons:

- Not all developers will develop the detailed information necessary to meet BLM standards. Most of the wind projects with pending applications are proposing generation technologies that have not been implemented at large scales. As a result, preparing complete and detailed plans of development (PODs) is difficult, and completing the required NEPA and CEQA documents is especially time-consuming and costly.
- As part of approval by the appropriate Lead Agency under NEPA and/or CEQA (generally the BLM and/or local jurisdiction), all regulatory permits must be obtained by the applicant or the prescriptions required by the regulatory authorities incorporated into the Lead Agency's license, permit or ROW grant. The large size of these projects may result in permitting challenges related to endangered species, mitigation measures or requirements, and other issues.
- Also after project approval, construction financing must be obtained (if it has not been obtained earlier in the process). The availability of financing will be dependent on the status of competing projects, the laws and regulations related to renewable project investment, and the time required for obtaining permits.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
1	Chuckwalla Valley State Prison (CA Dept. of Corrections & Rehabilitation)	Riverside Co. 19025 Wiley's Well Road, Blythe, CA	Prison	Existing	1,080	State prison providing long-term housing and services for male felons classified as medium and low-medium custody inmates jointly located on 1,720 acres of State-owned property. APN 879040006,008, 012, 027, 028, 029, 030
2	Ironwood State Prison (CA Dept. of Corrections & Rehabilitation)	Riverside Co. 19005 Wiley's Well Road, Blythe, CA	Prison	Existing	640	ISP jointly occupies with Chuckwalla Valley State Prison 1,720 acres of State-owned property, of which ISP encompasses 640 acres. The prison complex occupies approximately 350 acres with the remaining acreage used for erosion control, drainage ditches, and catch basins. 879040001, 004, 009, 010, 011, 015, 016, 017, 018, 019, 020
3	Blythe Energy Project (Blythe Energy, LLC)	Riverside Co. City of Blythe, north of I-10, 7 miles west of the CA/AZ border	Natural Gas	Existing	76	520 MW combined-cycle natural gas-fired electric-generating facility. Project is connected to the Buck Substation owned by WAPA.
4	Eagle Mountain Pumping Plant (MWD, SoCal)	Riverside Co. Eagle Mountain Road, west of Desert Center	Water Pumping Plant	Existing	N/A	144 ft. pumping plant that is part of the Metropolitan Water District of Southern California's facilities. APNs 807150007, 807150009, 807150010
5	Kaiser Mine (Kaiser Ventures, Inc.)	Riverside Co. Eagle Mountain, north of Desert Center	Mine	Mining activities stopped in 1983.	N/A	Kaiser Steel mined iron ore at Kaiser Mine in Eagle Mountain and provided much of the Pacific Coast steel in the 1950s. Mining project also included the Eagle Mountain Railroad, 51 miles long. Imported steel captured market share in the 1960s and 1970s and primary steelmaking closed in the 1980s. 701380031
6	ESJ Wind Project I (Energia Sierra Juarez U.S. Transmission, LLC (ESJ-U.S.), a subsidiary of Sempra Generation)	Northern Baja CA, Mexico, In the Sierra Juárez mountains north of the town of La Rumorosa.	Wind Energy (Renewable)	Final Interconnection Study completed. Draft Interconnection Agreement (IA) provided for review. (Queue No. 159a). Phase I is the Jacume phase and it expected to commence construction in 2011 and be completed in 2012.	N/A	Development of 400 MW of wind generation. Phase I (just north of the town of La Rumorosa) is proposed to generate approximately 100 MW of energy with 45 to 52 turbines. Point of interconnection proposed with the ECO Substation. Proposed to be online in July 2012 (CAISO 2010).
7	ESJ Wind Project II (Energia Sierra Juarez U.S. Transmission, LLC (ESJ-U.S.), a subsidiary of Sempra Generation)	Northern Baja CA, Mexico. In the Sierra Juárez mountains	Wind Energy (Renewable)	In Transition Cluster. Interconnection Study is anticipated to be completed July 2010. The Interconnection Agreement is anticipated to be completed in December 2010. (Queue No. 183).	N/A	Development of 300 MW of wind generation. Point of interconnection proposed with the ECO Substation. Proposed to be online in May 2013 (CAISO 2010).
8	Debenham Energy – CACA 0504855 (Debenham Energy LLC)	San Diego Co. West of the community of Boulevard, south of I-8.	Wind Testing Site	Wind testing stage (Type II)	2,169	Wind testing site.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
9	National Quarries – CACA 050635 (National Quarries LLC)	San Diego Co. Southeastern San Diego County, north of I-8, east of Sunrise Highway. Sawtooth Mountain.	Wind Testing Site	Memorandum of Understanding/CRA signed. Application complete April 22, 2009 Wind testing stage (Type II) Testing.	4,435	Wind testing site.
10	Ivanpah Solar Electric Generating System (ISEGS) (Solar Partners)	San Bernardino Co. Phase I: Mojave Desert near the NV border, west of Ivanpah Dry Lake; Phase II: San Bernardino County, 4.5 mi SW of Primm, NV, 3.1 mi W of the CA-NV border; Phase III:	Solar Energy (Renewable) [1]	Construction anticipated to be completed in the last quarter of 2012.	3,400	The project includes three solar concentrating thermal power plants, based on distributed power tower and heliostat mirror technology, in which heliostat (mirror) fields focus solar energy on power tower receivers near the center of each heliostat array. Each 100-MW site would require approximately 850 acres and would have three tower receivers and arrays; the 200-MW site would require approximately 1,600 acres and would have 4 tower receivers and arrays.
11	Imperial Valley Solar – Solar Two, CACA 047740 (Stirling Energy Systems (SES))	Imperial Co. North of I-8 in southwestern Imperial County, approximately 4 miles east of Ocotillo.	Solar Energy (Renewable) [1]	Application for Certification filed with California Energy Commission June 30, 2008. Application for Certification/POD determined adequate under minimal criteria. Notice of Intent published October 17, 2008. The Final EIS published in July 2010 and the Record of Decision was signed on October 5, 2010. The project was sold to AES in February 2011.	6,440	Development of up to 750 MW of energy on 6,140 acres of BLM-administered public lands and on 300 acres of private lands.
12	Mesquite Regional Landfill	Imperial Co. Next to the Mesquite Gold Mine, east of Glamis, near the Union Pacific Railroad mainline.	Landfill	EIS process complete.	N/A	This existing landfill is permitted to receive waste by rail.
13	Geothermal Overlay (Ram Power, Inc.)	Imperial Co. 8 miles east of the City of Brawley	Geothermal (Renewable)	County in process of securing EIR consultant	27,875	The project would create the East Brawley Geothermal Zone Overlay (G20), an approximate 27,875-acre contiguous area of private lands with the potential for geothermal resource development.
14	Hudson Ranch II	Imperial Co. 3.5 miles west-southwest of Niland	Solar Energy (Renewable)	P/C scheduled	326	Project would produce up to 49.9 MW of power, and would include a power plant, four production wells, brine pipelines
15	Mt. Signal	Imperial Co. Eight miles southwest of the City of El Centro	Solar Hybrid (Renewable)	Application being processed by Imperial County	974	The Mt. Signal project is a proposed 49.4 megawatt solar hybrid power station on roughly 974 acres.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
16	Golden Acorn Casino and Travel Center, SCH No. 2007071097 (Golden Acorn)	San Diego Co.	Commercial	Draft off-reservation Environmental Evaluation complete. Public review ended August 2007.	33	Expansion consisting of 150-room hotel, 900-space parking garage, surface parking, RV park, casino expansion, bowling alley, arcade, offices, retail, restaurants/food service, wind turbines, and water and wastewater improvements in three phases.
17	Campo Landfill Project	San Diego Co. Southeast corner of Campo Reservation.	Landfill	On May 27, 2010, the Campo General Council voted to rescind applicable lease agreements in order to terminate the Campo Sanitary Landfill Project. The vote occurred at a special General Council meeting resulting from a petition signed by the required number of tribal members. (Campo Kumeyaay Nation 2010).	1,150	493-acre landfill facility and a 657-acre buffer area surround landfill.
18	La Posta Casino	San Diego Co. 2 Crestwood Road, Boulevard, CA La Posta Reservation, just west of existing Kumeyaay Wind facility.	Commercial	Existing (Final environmental document 2006. Started operation in 2007.)	20	Existing casino consisting of a 20,000-square-foot casino facility on an approximately 20-acre portion of the La Posta Reservation.
19	Boulevard Border Patrol Station (U.S. Border Patrol)	San Diego Co. North of I-8, on the east side of Ribbonwood Road.	Border Patrol	Final Environmental Assessment and Finding of No Significant Impact issued February 2010.	32	32-acre site proposed for an administrative and training/ educational facility, operated 24 hours a day, 7 days a week. At least 250 personnel, over three shifts, would occupy the site throughout the week.
20	Centinela Solar (SDG&E)	Imperial Co. Imperial Valley, near Calexico	Solar Energy (Renewable)	Start of the NOP period.	2,067	Upon completion in 2014, the project would employ photovoltaic technology to deliver up to 175 MW of energy to SDG&E's service territory across the Sunrise Powerlink transmission line.
21	Superstition Solar 1 (Superstition Sunpeak)	Imperial Co. Westmorland	Solar Energy (Renewable)	BLM is currently reviewing the Plan of Development.	5,516	175 MW Solar
22	Campo (La Posta) Border Patrol Station (U.S. Border Patrol)	San Diego Co. 32355 Old Hwy 80, Pine Valley.	Border Patrol	Existing	25	25-acre site that includes a heliport. Station opened in 2008.
23	Bethel Solar X, Inc.	Imperial Co. Calexico	Solar Energy (Renewable)	Application being processed by Imperial County	571	49.4 MW Solar-hybrid
24	La Posta Mountain Warfare Training Facility (Naval Special Warfare Center)	San Diego Co. La Posta Road, south of I-8, Campo.	Military (Navy)	Final Environmental Assessment dated September 2007.	2,250	Construction of a special warfare operation and training facility
25	Energy Source Solar II, LLC	Imperial Co. Niland	Solar Energy (Renewable)	Application being processed by Imperial County	480	80 MW Solar

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
26	Salton Sea Solar Farm I	Imperial Co. Calipatria	Solar Energy (Renewable)	Application being processed by Imperial County	320	49.9 MW Solar
27	Salton Sea Solar Farm II	Imperial Co. Calipatria	Solar Energy (Renewable)	Application being processed by Imperial County	623	100 MW Solar
28	Calipat Solar Farm I (8 Minute Energy)	Imperial Co. Calipatria	Solar Energy (Renewable)	Application being processed by Imperial County	280	50 MW Solar
29	Calipat Solar Farm II (8 Minute Energy)	Imperial Co. Calipatria	Solar Energy (Renewable)	Application being processed by Imperial County	280	50 MW Solar
30	Midway Solar Farm I	Imperial Co. Calipatria	Solar Energy (Renewable)	Application being processed by Imperial County	326	50 MW Solar-PV
31	Midway Solar Farm II	Imperial Co. Calipatria	Solar Energy (Renewable)	Application being processed by Imperial County	803	155 MW Solar-PV
32	Mosaic Specific Plan (Heber Land Partners LLC)	Imperial Co. Southwest portion of the unincorporated townsite of Heber, 3 miles south of Interstate 8 and 2 miles west of State Route 111, on either side of Dogwood Road. APN 054-160-023-000	Residential	County waiting on CEO to respond to FIA. Draft EIR September 2008.	201.5	Project includes the approval of a Specific Plan, General Plan Amendment, Tentative Map, and Zone Change by the County of Imperial. The Specific Plan would allow for construction of up to 1,154 residential units, 2.7 acres for neighborhood commercial uses (23,200 square feet of commercial area), and 17.8 acres dedicated to future use by the Heber Public Utility District and Imperial Irrigation District.
33	Chocolate Mountain	Imperial Co. Niland	Solar Energy (Renewable)	Application being processed by Imperial County	320	49.9 MW Solar-PV
34	Procalamos RES	Imperial Co. South-central Imperial County, 6 miles east of Calexico and 1 mile north of Calexico East Port of Entry, bounded to west by South Alamo Canal, to east by Alamo River, and bisected by State Route 7.	Residential	EIR in progress	180.15	Project includes amendments to the County General Plan and Gateway Specific Plan area, in addition to an annexation to include the property within the Gateway SP area to allow service by Gateway water and sewer facilities. Project also includes a change in zone designation from A-3 Heavy Agriculture to Gateway Residential and a TTM for development of 841 residential units on 3,200-square-foot lots, 5 parks, 1 retention basin, RV storage, mini storage, and pedestrian pathways.
35	Desert Springs Oasis (Barone Group)	Imperial Co. El Centro	Resort	EIR in progress	1,105	Luxury resort community designed for motorsports and recreational vehicle opportunities. The master planned community will include vacation home sites, RV sites, interconnecting lakes, clubhouse, marina, nine-hole golf course, paved road courses, and off-road race tracks.
36	Black Rock Unit #123 (Calenergy)	Imperial Co. Niland	Geothermal (Renewable)	Application being processed by Imperial County	160	159 MW Geothermal

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
37	Brookfield 101 Ranch Specific Plan	Imperial Co. Unincorporated Imperial County, adjacent to the south of the Rancho Los Lagos SP area (see below)	Residential	Working on DEIR	1,897	Master planned residential community consisting of 6,986 homes, 73 residential neighborhoods, four elementary schools, one junior high school, mixed commercial uses, and 23 acres of parks and landscape areas.
38	ORNI 19 (Ormat)	Imperial Co. Brawley	Geothermal (Renewable)	Admin Draft EIR Received 11/22/10	32	49.9 MW Geothermal
39	Rancho Los Lagos Specific Plan	Imperial Co. Adjacent to the City of Brawley, bounded by Mead Rd to the north, Dogwood Rd to the east, Schartz Rd to the south, SR-86 to the west	Residential	County working on DEIR comments and mitigation; Draft EIR prepared October 2009	1,076	The project includes up to 3,830 residential dwelling units, a golf course, and a business park, including multiple uses such as warehouse industrial, commercial, retail, mixed use, parks, and schools.
40	Coyote Wells (Wind Zero Group, Inc.)	Imperial Co. Within the Ocotillo / Nomirage Community Area Plan	Tourism, residential, storage, hotel/resort, and infrastructure	Final EIR July 2010	944	The Specific Plan includes 22 parcels and 10 land use designations, and would be comprised of two main components, the open space/recreational area and the open space/preservation area. Other land uses within these areas include tourism, residential, storage, hotel/resort, and infrastructure.
41	Alder 70 (Scaroni Properties, Inc.)	Imperial Co. Within the urban planning area of the City of El Centro.	Residential	County waiting for documentation from the applicant.	75	Project is located in an agricultural area designated by the State as Farmland of Statewide Importance and Prime Farmland. The project includes a mix of single-family detached residences, attached condominiums, manufactured homes, and a commercial area with self-storage and a business area.
42	Ketchum Ranch - TM 5524	San Diego Co. South of I-8, north of Old Highway 80 and west of Carrizo Gorge Road.	Residential	Department of Planning and Land Use (DPLU) letter dated July 2007 requesting an EIR. Project placed on idle status in January 2010.	1,250	Subdivide 1,250 acres into 2,125 residential units, retail commercial development, elementary school site, public park, recreational center, open space, and associated infrastructure and utilities.
43	Elder - TPM 20981	San Diego Co. South of Old Highway 80 and west of McCain Valley Road.	Residential	First Draft EIR was submitted in February 2006. No activity since 2006. Project owner changed February 2010.	109	Subdivide 109 acres into five single-family residential lots. The proposed project is a minor residential subdivision with the Boulevard Community Planning Area. The project proposes to divide 109.29 net acres into four parcels and a remainder measuring 11.2 acres, 11.2 acres, 11.3 acres, 11.6 acres, and 63.9 acres.
44	Davis-Inman - TPM 21081	San Diego Co. 32062 Highway 94.	Residential	Problem with project site access identified. Appeal due to fire code filed October 2009.	96.23	Subdivide 96.23 acres into four residential lots.
45	Star Ranch - TM 5459	San Diego Co. South of Big Potrero and west of Buckman Springs Road.	Residential	Scoping letter sent to DPLU on August 27, 2008. Project is on idle status.	2,160	Subdivide 2,160.1 acres into 460 single-family residential lots, commercial uses, equestrian facility, helipad, water treatment facility, and wastewater treatment facility.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
46	Harvest Glen - TM 5366	San Diego Co. Buckman Springs Road and Lake Morena Drive.	Residential	DPLU extension approval letter dated January 2006. The project was placed on idle status on January 10, 2010.	286.68	Subdivide 286.68 acres into 40 single-family residential lots .
47	Vaughn - TM 5417	San Diego Co. 30069 Canvasback Drive, Campo, just west of Buckman Springs Rd.	Residential	Application being processed by Imperial County	81.24	14-lot TM with a 15th non-buildable lot for the roads and water system. The proposed lots range from 5.00 to 6.85 net acres.
48	Volli - TPM 20889	San Diego Co. Old Highway 80 and La Posta Road, near Boulder Oaks.	Residential	Project determined to have inactive status as of November 2009.	39.9	Subdivision to create four 8-acre parcels, and one 7.9 parcel for a single family residence
49	McClintock - TPM: 20755	San Diego Co. Basso Road in the Campo/Lake Morena Community.	Residential	Project was approved on June 19, 2003.	10	Subdivision of 10.0 acres into two residential parcels of 4.15 acres and 4.56 acres net.
50	Bartlett - TPM: 20754	San Diego Co. 1850 Lake Moreno Drive.	Residential	Project was approved on June 17, 2003.	164	Subdivide 164 acres into four single-family residential lots.
51	Tibbot - TPM: 20686	San Diego Co. 20774 Bee Valley Road.	Residential	Notice of Determination filed with County Clerk on Oct 17, 2006.	35	Subdivide 35 acres into four single-family residential lots.
52	Dart - TPM: 20675	San Diego Co. Ribbonwood Road and Roadrunner Lane.	Residential	Project approved January 4, 2007.	33.46	Subdivision into three lots. Two lots for single-family residential (SFR) and one for general commercial uses.
53	Grizzle - TPM: 20719	San Diego Co. McCain Valley Road and I-8.	Residential	Notice of Determination filed with County Clerk on Jun 29, 2006.	245	Subdivision of one lot into four parcels with a remainder parcel for SFR development.
54	Arellano - TPM: 20756	San Diego Co. Hauser Creek Road west of Lake Morena Dr.	Residential	County staff completed review on January 26, 2009.	17.27	Subdivide a 17.27-acre parcel into three parcels.
55	Pijnenburg - TPM: 20778	San Diego Co. Barrett Smith Road, North of Interstate 94.	Residential	Approved on August 6, 2009.	76	Five-lot subdivision.
56	Heald - TPM 21014	San Diego Co. Southern terminus of Sunfish Way.	Residential	Project is on idle status as of February 2, 2010.	36	Four-lot subdivision (5 net acres each) with a remainder lot (15 net acres)
57	Campo Hills Commercial Building	San Diego Co. Evening Primrose Trail and Sheridan Road.	Commercial	Project approved August 16, 2007.	19.31	Site plan to develop a commercial building consisting of four attached units and a parking area.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
58	Buckman Springs Borrow Reclamation Plan	San Diego Co. 1588 Buckman Springs Road.	Reclamation Plan	Project approved in January 2007.	N/A	Allow for the continued use of Buckman Springs Borrow Pit to complete road repairs countywide by the County of San Diego, Department of Public Works. Additionally, a Reclamation Plan (RP 05-001) is being processed to ensure that the project site is reclaimed pursuant to the Surface Mining and Reclamation Act of 1975 (as amended) at the conclusion of each of the three phases of extraction on site. The Major Use Permit expired November 7, 2005, but the extension to the Major Use Permit was applied for prior to expiration of the original permit. The modification to the Major Use Permit would allow for continued extraction of materials for an additional 25 years, rather than 50 years.
59	Borrow Pit Miller Creek	San Diego Co. East of La Posta Road and North of Highway 94.	Reclamation Plan	Draft EIR currently in the process. Funds not available for EIR submittal. Inactive status January 2010.	136.5	Major Use Permit and Reclamation Plan for the RCP - Circle F Ranch project. The project proposes the extraction of sand resources within approximately 58.2 acres along the Miller Creek alluvial valley. A 16.4-acre area at the north end of the project site would be used for the creation of wetlands. The general operations for processing material and access would consist of an additional 61.9 acres.
60	Nextel Cell Tower	San Diego Co. North of Highway 94 on Harris Ranch Road.	Cell Tower	Project approved October 16, 2006.	N/A	35-foot faux broadleaf tree with antennas and equipment shelter.
61	Buckman Springs Cell Tower	San Diego Co. 4277 Buckman Springs Road.	Cell Tower	Mitigated Negative Declaration completed February 2007.	N/A	Installation and operation of telecommunication facility disguised as a faux monopine tree 50 feet high with six panel antennas located at a height of 46 feet. The associated equipment cabinets would include one electric meter panel, one telephone interface, and would be housed within an equipment enclosure measuring 20 feet by 11.5 feet by 10 feet.
62	Verizon Cell Tower	San Diego Co. 22201 Mariah Way.	Cell Tower	Draft Initial Study Checklist completed November 4, 2009.	N/A	35-foot-high mono-pine mounted with 12 panel antennas. Associated equipment would include an emergency generator and two air-conditioning units that would be surrounded by an 8-foot-high concrete block wall and equipment cabinets that would be placed within an equipment shelter.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
63	Vista Cell Tower	San Diego Co. 1524 Kimberly Way.	Cell Tower	Scoping Letter submitted to project applicant on February 15, 2010, requesting additional information.	N/A	39-foot-high faux cross arm utility poles to accommodate four wireless carriers. Each of the proposed faux utility poles would consist of three panel antennas mounted to the cross arm and two sets of three antennas flush mounted to the utility pole. The facility would contain a total 18 antennas when fully occupied by all wireless carriers. Associated equipment for AT&T, Sprint, and T-Mobile would consist of four outdoor equipment cabinets and one Global Positioning System (GPS) antennas for each carrier. Verizon's supporting equipment would consist of indoor equipment cabinets enclosed within a prefabricated equipment shelter, one GPS antenna, and one 30 kW emergency generator enclosed by a Concrete Masonry Unit (CMU) wall with a solid metal gate. The proposed utility poles and supporting equipment would be surrounded by a 34-foot by 70-foot by 6-foot CMU enclosure.
64	Barrett Wireless	San Diego Co. Highway 94, west of Saxon Rd and east of Emery Rd.	Cell Tower	Notice of Exemption sent to County Clerk on October 9, 2007.	N/A	Nextel wireless facility in Potrero on occupied property. Antenna pole would be camouflaged as a monopine and access road to facility would need to be improved.
65	Horizon Tower	San Diego Co. Cam Del Monte Road and Shasta Way.	Cell Tower	Approved in March 2010.	N/A	30-foot-tall faux monobroadleaf and associated equipment contained within a shelter 20 feet long by 11.5 feet wide. The lease area is 41.2 feet wide by 48 feet long and would be surrounded by a 6-foot-high fence.
66	White Star Cell Tower	San Diego Co. 1680 Tierra del Sol at Shasta Way.	Cell Tower	Approved in April 2008.	N/A	Replace one existing panel antenna with a new panel antenna and add four additional panel antennas on top of the existing 100-foot-tall lattice tower
67	Outdoor World Tower	San Diego Co. 37113 Highway 94.	Cell Tower	Approved in March 2010.	N/A	The project consists of a 30-foot-tall faux monobroadleaf and associated equipment contained within a shelter 20 feet long by 11 feet and 6 inches wide. The lease area is 41 feet and 2 inches wide by 48 feet long and would be surrounded by a 6-foot-high fence.
68	Radio Antenna	San Diego Co. 2456 A Lake Morena Drive.	Cell Tower	Approved in September 2009.	N/A	100-foot lattice FM radio broadcast antenna tower and transmitting equipment. The FM transmit antenna measures approximately 40 feet and is mounted vertically parallel to the top portion of the tower; it does not extend beyond the height of the tower. The equipment would be concealed within an 8-foot by 8-foot by 10-foot tall prefabricated equipment shelter located adjacent to the tower, to the north. The exterior finish of the equipment shelter is to be textured and painted (earth tone) to blend with the existing natural environment. Access would be provided through the existing 10-foot-wide dirt access road (within a 30-foot easement) off Lake Morena Drive.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
69	Pacific Bell Cell Site	San Diego Co. 44441 Old Highway 80.	Cell Tower	Approved in March 2001.	N/A	Construct a cell tower site.
70	Calle Nada Cell Site	San Diego Co. 4737 Calle Nada.	Cell Tower	Approved in August 2007.	N/A	50-foot faux cypress and related power and radio equipment for cell site.
71	Verizon Wireless Cell Site	San Diego Co. 31906 Old Highway 80.	Cell Tower	Approved in March 2009.	N/A	Addition of one 2-foot diameter microwave antenna mounted inside of the existing faux water tank (permit P04-019), two GPS antennas mounted to the outside of the previously approved 11-foot 6-inch by 28-foot concrete, prefabricated equipment shelter, and the installation of a 30 kw emergency backup generator with a 52-gallon diesel fuel tank The generator would be located inside the previously approved concrete equipment shelter. The equipment shelter would need to be slightly modified to allow an extra door for access and two vents for ventilation.
72	Gasoline Curve Cell Tower	San Diego Co. Shockey Road and Campo Road.	Cell Tower	Categorical Exemption approved in September 2007.	N/A	Project proposes a 30-foot faux broadleaf tree cellular antenna and 230-square foot equipment shelter
73	Ozbirn Cingular Cell Tower	San Diego Co. 1524 Kimberly Way, Campo.	Cell Tower	Approved in March 2005.	N/A	Construction of a wireless telecommunications facility of a 45-foot camouflage utility pole with three antennas.
74	SDG&E Mtn Empire Operator Training Facility	San Diego Co. 30763 Old Hwy 80.	Commercial	Approved in March 2009	N/A	Major Use Permit modification for the operation of an explosives storage facility.
75	Adelaides Roman Catholic Church	San Diego Co. Sheridan Road and Custer Road.	Church	Approved in November 2007.	5.13	Major Use Permit to allow a religious assembly use with an elementary school on an approximately 5.13-acre site to be constructed in three phases.
76	Buckman Springs Road Bridge	San Diego Co. Southwest of I-8, north of Morena Stokes Valley Road, Campo.	Public Facilities	Estimated completion date Summer 2013.	N/A	Construct a new 450-foot bridge over Cottonwood Creek.
77	Ribbonwood Road Sightline Improvement	San Diego Co. North of I-8 along Ribbonwood Road approximately 0.25 miles south of Opalocka Road, near Boulevard.	Public Facilities	Estimated completion date Spring 2011.	N/A	Approximately 270-foot improvement to sightline on a horizontal curve.
78	IV Solar Company	Imperial Co. Niland	Solar Energy (Renewable)	Application being processed by Imperial County	123	23 MW Solar-PV
79	Hudson Ranch II (HR Power II)	Imperial Co. Niland	Geothermal (Renewable)	Application being processed by Imperial County	326.26	49.9 MW Geothermal
80	Frink Road Solar Power	Imperial Co. Niland	Solar Energy (Renewable)	Application being processed by Imperial County	280	30.04 MW Solar-PV

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
81	Imperial Solar Energy Center West (CSOLAR Development, LLC)	Imperial Co. 8 miles SW of the City of El Centro and south of the community of Seely, in the unincorporated Mt. Signal area of Imperial County	Solar Energy (Renewable)	Comment period ended 01/10/11; Draft EIR December 2010.	1,130	The project consists of 2 primary components: (1) construct and operate 250-MW Imperial Solar Energy Center West solar energy facility; and (2) construct and operate electrical transmission lines that would connect the solar facility to the existing Imperial Valley substation.
82	Imperial Solar Energy Center South (CSOLAR Development, LLC)	Imperial Co. 8 miles SW of the City of El Centro and south of the community of Seely, in the unincorporated Mt. Signal area of Imperial County	Solar Energy (Renewable)	Comment period ended 01/25/11; Draft EIR December 2010.	946.6	The project consists of 3 primary components: (1) construct and operate the 200-MW Imperial Solar Energy Center South solar energy facility; (2) construct and operate the electrical transmission lines that would connect from the solar power facility to the existing Imperial Valley Substation; and (3) widen an existing access road for ingress and egress to the Solar facility across federal and private lands located along the west side of the Westside Main Canal.
83	SDG&E Proposed Photovoltaic Solar Field (Ocotillo Sol, CACA-051625)	Imperial Co. Located on approximately 100 acres of federal land directly adjacent to SDG&E's Imperial Valley substation.	Solar Energy (Renewable)	Application submitted for transportation and utility systems. A draft Plan of Development has been submitted as of December 2010.	N/A	SDG&E proposed photovoltaic solar field. Producing 12 to 14 megawatts of renewable energy.
84	Mount Signal Solar Farm (8 Minute / SDG&E)	Imperial Co. Imperial Valley	Solar Energy (Renewable)	In process of RFP	1,375	The proposed project is a 200-MW solar thermal generating station with a biomass generation component, and an associated 230-kV transmission line for the Imperial Irrigation District.
85	Campo Wind Energy Project	San Diego Co. South of the Tule Wind Project and west of the Boulevard Substation on the Campo Indian Reservation	Wind Energy (Renewable)		N/A	SDG&E proposes to construct and operate approximately 106 turbines capable of generating 160 MW of electricity on its reservation lands.
86	Manzanita Wind Energy Project	San Diego Co. On the same ridgeline as the existing Kumeyaay Wind facility on the Campo Indian Reservation	Wind Energy (Renewable)		N/A	The Manzanita Tribe proposes a project capable of generating up to 57.5 MW, which could include up to 25 wind turbines depending on the turbine size selected.
87	Jordan Wind Energy Project	San Diego Co. West of Boulevard in unincorporated San Diego County.	Wind Energy (Renewable)	Construction of the project is scheduled to occur between February and October 2013, and anticipated to be operational in November 2013.	N/A	The Jordan Wind Energy Project would construct and operate 40 2.3MW turbines (total generating capacity of 92 MW) west of Boulevard in unincorporated San Diego County.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
88	Renewergy, LLC, CACA 048004	Imperial Co. Ocotillo, CA	Public Facilities and Utilities (Wind)	Meteorological Tower Environmental Assessment nearing completion. Pending Native American Consultation. Cultural literature started. Wind testing stage (Type II).	3,912	Wind Testing Site - Meteorological Tower
Red line on the map	Sunrise Powerlink (SDG&E)	San Diego Co. Traverses southeastern San Diego County.	Transmission Line	Under construction. Construction began in the Ocotillo area in late Spring 2011. Most tower erection is anticipated to complete in the vicinity of Ocotillo by the end of 2011, but stringing activity is anticipated to continue into 2012.	N/A	150-mile transmission line from Imperial County to Sycamore Canyon near Poway.
*	Interstate 10 (Caltrans)	San Diego Co. Linear project running from Santa Monica to Blythe	Highway	Existing	N/A	Interstate 10 (I-10) is a major east-west route for trucks delivering goods to and from California. It is a four lane divided highway in the Blythe region.
*	Devers-Palo Verde Transmission Line (SCE)	Midpoint Substation to Devers Substation	Transmission Line	Existing	N/A	Existing 500 kV transmission line parallel to I-10 from Midpoint Substation, approximately 10 miles southwest of Blythe, to the SCE Devers Substation, near Palm Springs.
*	West-wide Section 368 Energy Corridors (BLM, DOE, U.S. Forest Service)	Riverside Co., parallel to DPV corridor	Energy Corridors	Approved by BLM and U.S. Forest Service	N/A	Designation of corridors on federal land in the 11 western states, including California, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). One of the corridors runs along the southern portion of Riverside County.
*	ESJ Wind Project III (Energia Sierra Juarez U.S. Transmission, LLC (ESJ-U.S.), a subsidiary of Sempra Generation)	Northern Baja CA, Mexico. In the Sierra Juárez mountains	Wind Energy (Renewable)	In Transition Cluster. Interconnection Study is anticipated to be completed July 2010. The Interconnection Agreement is anticipated to be completed in December 2010. (Queue 215).	N/A	Development of 420 MW of wind generation. Point of interconnection proposed with the ECO Substation. Proposed to be online in February 2014 (CAISO, 2010).
*	Energy Source Solar I, LLC	Imperial Co. Niland	Solar Energy (Renewable)	N/A	480	80 MW Solar
*	Superior – Oat Pit Reclamation Plan	Imperial Co.	Reclamation Plan	On hold for 4 months due to BLM	N/A	
*	Granite Reclamation Plan		Reclamation Plan	Plan of operation under BLM	N/A	
*	Border Patrol Fence Project (U.S. Border Patrol)	San Diego Co. Along U.S./Mexico border in eastern San Diego Co.	Border Patrol	Existing	N/A	Constructed in eastern San Diego County from July 2008 to March 2009. As of March 2009 the 18-foot-tall, 3-foot-deep fence has been completed in eastern San Diego County.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
*	Wind Measurement Towers (USDA Forest Service, Cleveland National Forest)	San Diego Co. Cleveland National Forest. Descanso Ranger District. San Diego County. North side of I-8, LEGAL - T 16 S, R 5 E, Sections 1, 2, and 13.	Wind Testing	U.S. Forest Service issued a permit in February 2010 for 3 towers in the area of La Posta Valley and Fred Canyon Road.	N/A	The Descanso Ranger District proposes to authorize temporary wind measurement towers. The towers would be approximately 160 feet high and testing would be 3 years or less in duration.
*	Consolidation and Reissuance of SDG&E Permits (USDA Forest Service)	San Diego Co. Cleveland National Forest	Energy	Expected decision by the Forest Service in March 2011.	N/A	The Forest Service is proposing a "master permit" to consolidate and reissue approximately 75 permits presently issued to SDG&E.
*	Chevron Energy Solutions (CES), Lucerne Valley Solar Project	San Bernardino Co. On unincorporated land in the Mojave Desert, approximately 8 miles east of Lucerne Valley.	Solar Energy (Renewable) [1]	The Final EIS was issued in August 2010. The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW grant to CES for the proposed solar project.	516	Chevron Energy Solutions is proposing to develop a 45-MW solar photovoltaic (PV) plant and associated facilities on 516 acres of BLM-administered lands.
*	First Solar, Desert Sunlight Solar Farm (DSSF)	Eastern Riverside Co. On BLM-administered lands 6 miles north of the rural community of Desert Center.	Solar Energy (Renewable) [1]	The Draft EIS was issued in August 2010 with public meeting occurring through November 2010. The Final EIS has not yet been issued.	4,410	First Solar Development, Inc. (First Solar) proposes to construct and operate a 550-MW solar photovoltaic (PV) power plant project. The DSSF would include three main components (1) the Solar Farm site, (2) a transmission line, and (3) a Southern California Edison owned and operated substation, Red Bluff Substation.
*	NextEra, Ford Dry Lake (Genesis) Solar Project	Riverside Co. Approximately 25 miles west of the City of Blythe on BLM-administered lands in an undeveloped area of the Sonoran Desert.	Solar Energy (Renewable) [1]	The Final EIS was issued in August 2010. Construction to begin no later than September 30, 2011. Construction is expected to take 39 months.	4,640	The project would consist of two independent solar electric generating facilities with a nominal net electrical output of 125 MW each, for a total net electrical output of 250 MW. Electrical power would be produced using steam turbine generators fed from solar steam generators. The solar steam generators receive heated transfer fluid from solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun. The project would use a wet cooling tower for power plant cooling, with water supplied from on-site groundwater wells.
*	Calico Solar Project (CSP)	San Bernardino Co. In the Mojave Desert approximately 37 miles east of Barstow.	Solar Energy (Renewable) [1]	The Final EIS was completed in August 2010. The CPUC approved the Application for Certification in October 2010. BLM authorized 663.5-MW facility on 4,613 acres. The ROD was issued on October 20, 2010. Construction was planned to begin in late 2010 and take approximately 40 months to complete.	8,230	The proposed Calico Solar project would be a nominal 850-MW Stirling engine project, The primary equipment for the generating facility would include the approximately 30,000, 25-kilowatt solar dish Stirling systems (referred to as SunCatchers), their associated equipment and systems, and their support infrastructure.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
*	Solar Millennium, Blythe Solar Power Project	Riverside Co. 2 miles north of the I-10 freeway and 8 miles west of the City of Blythe within the Palo Verde Mesa of the Sonoran Desert region.	Solar Energy (Renewable) [1]	The Final EIS was issued in August 2010.	9,400	The project is a concentrated solar thermal electric generating facility with four adjacent, independent, and identical solar plants of 250-MW nominal capacity each for a total capacity of about 1,000-MW nominal. The project would use solar parabolic trough technology to generate electricity.
*	Solar Millennium , LLC and Chevron Energy Solutions, Palen Solar Power Project	Riverside Co. 10 miles east of Desert Center, along I-10 freeway approx. halfway between the cities of Indio and Blythe.	Solar Energy (Renewable) [1]	The CPUC approved the Application for Certification in December 2010. The Draft EIS was issued by BLM in April 2010. The Final EIS has not yet been published.	5,240	The project would be a concentrated solar thermal electric generating facility with two adjacent, independent, and identical solar plants of 250-MW capacity each for a total capacity of 500 MW. The project would utilize solar parabolic trough technology to generate electricity. The project's total footprint covers 5,200 acres of BLM-managed public land and one 40-acre private parcel.
*	Solar Millennium, LLC, Ridgecrest Solar Power Project (RSPP)	Kern Co. 5 miles southwest of the city of Ridgecrest in high northern Mojave Desert.	Solar Energy (Renewable) [1]	Solar Millennium withdrew its Application for Certification from the CPUC in January 2011. In a June 30, 2010, letter to the BLM, Solar Millennium requested its application be suspended while it conducts a two year Mohave Ground Squirrel study.	3,995	The project will have a nominal output of 250 MW, consisting of a single power plant utilizing two solar fields. The project will utilize solar thermal parabolic trough technology to generate electricity.
*	AES Wind Generation, Daggett Ridge Wind Energy Project (DRWEP)	San Bernardino Co. 11 miles southeast of Barstow and 5 miles south-west of the town of Daggett.	Wind Energy (Renewable) [1]	In a Sept. 2, 2010, letter, AES Wind Generation requested a three-month delay for the DRWEP in order to address potential risks to golden eagles. The Draft EIS has not yet been issued.	1,956	The wind energy project would generate up to 82.5 MW of electric energy. The proposed project, including the construction of new roads, turbines, and other facilities, would be constructed on approximately 1,576 acres of land managed by the BLM and 380 acres of land owned by AES Wind Generation. DRWEP would be comprised of 33 GE, or similar, 2.5-megawatt wind turbine generators, a project substation, an overhead transmission line, and an interconnection to the existing SCE 115-kilovolt transmission line, along with other structures. Construction of the DRWEP would take nine to 11 months.
*	Granite Mountain Wind, LLC, Granite Mountain Wind Energy Project (GMWEP)	San Bernardino Co. 14 miles east of Victorville.	Wind Energy (Renewable) [1]	The Draft EIS was issued in April 2010. The Final EIS has not yet been completed. In a Sept. 7, 2010, letter, RES America Developments Inc. requested a delay for the GMWEP in order to address potential impacts to golden eagles.	2,756	The proposed project would be a wind powered electrical generating facility designed to produce 73 MW of renewable power. The project's total footprint is 2,756 acres, with 2,086 acres on BLM-managed public lands and 670 acres situated on private land. GMWEP would incorporate 28 Siemens, or similar, 2.3-MW wind turbine generators, pad mounted transformers, and underground electrical collection system, a project substation, and an overhead transmission line.

Table 4.1-1. Cumulative Projects List

ID #	Project Name & Ownership	Location	Project Type	Status	Acres	Project Description
*	Pacific Wind Development, LLC, Tule Wind Energy Project (TWEP)	San Diego Co. In McCain Valley in eastern San Diego County, approx. 60 miles east of San Diego, near Boulevard.	Wind Energy (Renewable) [1]	The Draft EIR/EIS was issued in December 2010. Public meetings were scheduled through February 2011. The Final EIR/EIS has not yet been completed.	15,493	This project would be a wind turbine facility capable of generating up to 200 MW of electricity. The project's footprint would be 15,493 acres and be situated on public lands administered by BLM, CA State Lands Commission, as well as lands on the Ewiiaapaayp Indian Reservation. TWEP would involve 1.5- to 3-MW wind turbines, generator step up transformers, a 34.5-kilovolt overhead and underground collector cable system linking turbines to the next and to a project substation.
*	Horizon Wind Energy, LLC, Rising Tree Wind Farm	Kern Co. 3 miles from the town of Mojave and south of Highway 58.	Wind Energy (Renewable) [1]	The environmental review process for this project has just begun. The NOI was published in January 2011.	2,745	This project would produce 234 MW of wind energy and would be located on 2,745 acres, 527 of which are managed by the BLM.
*	Iceland America Energy, LLC, Truckhaven Proposed Geothermal Project	Imperial Co. Southwest of the Salton Sea and the town of Salton City.	Geothermal Energy (Renewable) [1]	The Record of Decision was issued in July 2008 for the Truckhaven Geothermal Leasing Area.	3,200	49 MW of renewable geothermal energy
*	Rice Solar (WAPA)	Eastern Riverside Co.	Solar Energy (Renewable) [1]	NOA released on 10/27/2010 CEC approved the project on 12/15/2010	1,410	The project is a solar generating facility that will generate approximately 450,000 megawatt hours of electricity, with a nominal net generating capacity of 150 megawatts.
*	West Fry	San Bernardino Co. 20 miles southeast of Barstow, California in the Johnson Valley Off-Highway Vehicle Area	Wind Energy (Renewable) [1]	NOI released on 5/23/2008	3,100	Project comprised of access roads ,up to 34 wind turbine generators, pad-mounted transformers, an underground electrical collection system, a new 230-kV electrical substation, approximately 500-ft 230-kV of overhead transmission line from the substation to a new switchyard where the project would interconnect to SCE's existing Pisgah No.2 230-kV transmission line, an O&M building, underground communication lines, and two permanent meteorological towers.
*	Alta East	Kern Co. About 3 miles NW of Mojave and 11 miles east of the city of Tehachapi	Wind Energy (Renewable) [1]	Undergoipng environmental review.	3,200	The Alta East project is a proposed 300-MW wind power generating facility.
*	West Chocolate Mountains	Imperial Co. North central Imperial County within the CDCA boundaries.	Geothermal (Renewable) [1]	NOI released on 2/10/2010	N/A	
*	Orni 21 (Wister)	Imperial Co. Brawley	Geothermal (Renewable)	TPM (minor subdivision); Variance (height of transmission poles connecting to plant); and CUP 080023 (to drill geothermal) filed Imperial County	N/A	Orni 21 is a geothermal energy project proposed to 49.9 mega watts of geothermal power.

N/A: Not available

[1] Located partially or entirely on BLM-administered lands in the California Desert District.

Table 4.1-2. Cumulative Projects Within the Geographic Scope of Cumulative Analysis for Each Resource Area

Resource Area / BLM Program Area	Geographic Area of Consideration	Elements to Consider	BLM Authorized and Other Known County Projects/Actions/Activities
Air Resources	Six-mile radius around project site	PM 2.5, PM 10, Ozone (NOx and VOC as ozone precursors)	• Coyote Wells Specific Plan • Sunrise Powerlink • Renewergy, LLC • SDG&E Proposed Photovoltaic Solar Field
Global Climate Change	International, global	CO2E	Global Cumulative Impacts
Cultural Resources	Cultural sites, traditional use areas, and cultural landscapes within approximately a ten-mile radius of the project site	Ground-disturbing activities and the cultural character of the site and its vicinity. Cultural resources, including archaeological and ethnographic resources	• ESJ Wind Project I • Imperial Valley Solar – Solar Two • Coyote Wells Specific Plan • Ketchum Ranch • Elder – TPM 20981 • Grizzle – TPM 20719 • Pacific Bell Cell Site • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC
Environmental Justice	A half-mile radius around project site	Significant environmental impacts in the vicinity of the site	• Coyote Wells Specific Plan • Sunrise Powerlink • Renewergy, LCC
Lands and Realty	Lands in Imperial County and southeastern San Diego County	Established communities, existing land uses, designated utility corridors (e.g., transmission lines, cellular telephone towers, poles), and existing ROWs	• SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC • Coyote Wells Specific Plan • Sunrise Powerlink • Campo Wind Energy Project • Manzanita Wind Energy project • Jordan Wind Energy Project • Debenham Energy – CACA 0504855 • National Quarries – CACA 050635 • Imperial Solar Valley Soar – Solar Two • Imperial Solar Energy Center – West • Imperial Solar Energy Center – South • Geothermal Overlay • Hudson Ranch II (solar energy) • Mount Signal Solar Farm • Centinela Solar • Superstition Solar 1 (Superstition Sunpeak) • Energy Source Solar II, LLC • Salton Sea Solar Farm I & Salton Sea Solar Farm II • Calipat Solar Farm I & Calipat Solar Farm II • Midway Solar Farm I & Midway Solar Farm II

Table 4.1-2. Cumulative Projects Within the Geographic Scope of Cumulative Analysis for Each Resource Area

Resource Area / BLM Program Area	Geographic Area of Consideration	Elements to Consider	BLM Authorized and Other Known County Projects/Actions/Activities
			• Chocolate Mountain • Black Rock Unit #123 • IV Solar Company • Hudson Ranch II (geothermal energy) • Frink Road Solar Power
Mineral Resources	Entire Imperial County	Loss of availability of mineral resources, including as a result of access restrictions.	Imperial County All projects within Imperial County listed in Table 4.1-1 to result in traffic that could temporarily impede access to mineral resources.
Multiple Use Classes	CDCA Plan areas bearing the multiple use class designation "Limited"	Restriction or preclusion of otherwise allowable use opportunities	All renewable projects on BLM lands listed in Table 4.1-1; and • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC
Noise	One-mile radius around project site, and projects using same haul routes	Equipment, motor vehicles	• ESJ Wind Project I • ESJ Wind Project II • Imperial Valley Solar – Solar Two • Imperial Solar Energy Center – South • Imperial Solar Energy Center – West • Mt. Signal • Centinela Solar • Coyote Wells Specific Plan • Ketchum Ranch • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC
Paleontological Resources	Project site itself	Ground-disturbing activities; rock units with potential high sensitivity or known paleontological resources	• Sunrise Powerlink
Public Health and Safety	Entire Imperial County	Waste disposal facilities	Imperial County All projects within Imperial County listed in Table 4.1-1
Recreation	Local and regional recreation facilities in southern Imperial County and southeastern San Diego County	Dispersed recreational opportunities and experiences, and LTVAs	• Imperial Valley Solar – Solar Two • Imperial Solar Energy Center – South • Imperial Solar Energy Center – West • Centinela Solar • National Quarries – CACA 050635 • Sunrise Powerlink • La Posta Mountain Warfare Training Facility (Naval Special Warfare Center) • Coyote Wells Specific Plan • Ketchum Ranch

Table 4.1-2. Cumulative Projects Within the Geographic Scope of Cumulative Analysis for Each Resource Area

Resource Area / BLM Program Area	Geographic Area of Consideration	Elements to Consider	BLM Authorized and Other Known County Projects/Actions/Activities
			• Mount Signal Solar Farm • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC
Social and Economic Setting	Entire Imperial County and San Diego County	Flow of goods and services; impacts to local infrastructure and services; ability to meet housing demand; employment/labor demand; possible positive impacts to regional economic sectors and/or adverse community impacts; severance or other tax benefits; ability of communities to absorb impacts.	Imperial County All projects within Imperial County listed in Table 4.1-1 San Diego County All projects within San Diego County listed in Table 4.1-1
Soil Resources	Project site itself	Erosion	• Sunrise Powerlink
Special Designations	Ten-mile radius around project site	Views, glint, glare, noise, recreation	• ESJ Wind Project I • Imperial Valley Solar – Solar Two • Coyote Wells Specific Plan • Ketchum Ranch • Elder – TPM 20981 • Grizzle – TPM 20719 • Pacific Bell Cell Site • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC
Transportation and Public Access	Immediate project vicinity	Construction traffic – materials and workers OHV recreation opportunities, changes in viewscape, unauthorized routes	• Coyote Wells Specific Plan
Vegetation Resources	Western Imperial County and southeast San Diego County. The following are areas of biological significance that have potential to be affected by the proposed OWEF: • California Desert Conservation Area • BLM Limited Use and Controlled Use Lands • ABDSP	Ephemeral drainages and natural communities; special status plants; stabilized and partially stabilized dunes and sand transport corridors; invasive plants	• ESJ Wind Project I • Imperial Valley Solar – Solar Two • Coyote Wells Specific Plan • Ketchum Ranch • Elder – TPM 20981 • Grizzle – TPM 20719 • Pacific Bell Cell Site • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC • Imperial Solar Energy Center – South • Imperial Solar Energy Center – West • Tule Wind Energy Project (TWEP)

Table 4.1-2. Cumulative Projects Within the Geographic Scope of Cumulative Analysis for Each Resource Area

Resource Area / BLM Program Area	Geographic Area of Consideration	Elements to Consider	BLM Authorized and Other Known County Projects/Actions/Activities
Visual Resources	Project viewshed and viewshed along I-8 corridor	Project appearance; construction-related dust, light, glint and glare; views from key observation points	• Coyote Wells Specific Plan • Sunrise Powerlink • Imperial Valley Solar – Solar Two • Imperial Solar Energy Center – South • Imperial Solar Energy Center – West • Mount Signal Solar Farm • Centinela Solar
Water Resources	Sole Source Aquifer	Hydrology and quality, Basin balance, levels and quality	• Coyote Wells Specific Plan • Sunrise Powerlink
Wildland Fire Ecology	One-mile radius around project site	Mortality of plants and wildlife, loss of forage and cover; changes to the vegetation communities; spread of invasive plants; consequences of subsequent extreme weather events; air quality	• Coyote Wells Specific Plan • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field
Wildlife Resources	FTHL – Western Population Barefoot banded gecko – the extent of its habitat in the U.S. PBS – Essential Habitat in the Coyote, In-Ko-Pah, and Jacumba mountains as well as the desert floor to 10 miles east of the proposed OWEF and south to the Mexico border Burrowing owl – Western Imperial County Golden eagle and wide-ranging, special status species – Ten-mile radius around the proposed OWEF	Migratory birds, golden eagle, big horn sheep, flat-tailed horned lizard, burrowing owl. Also, mortality and injury; special status wildlife; wildlife movement and connectivity; indirect impacts, including from lighting, collisions, and climate change.	• ESJ Wind Project I • Imperial Valley Solar – Solar Two • Coyote Wells Specific Plan • Ketchum Ranch • Elder – TPM 20981 • Grizzle – TPM 20719 • Pacific Bell Cell Site • Sunrise Powerlink • SDG&E Proposed Photovoltaic Solar Field • Renewergy, LLC • Imperial Solar Energy Center – South • Imperial Solar Energy Center – West • Tule Wind Energy Project (TWEP) • Superstition Solar 1 (Superstition Sunpeak)

4.2 Air Resources

4.2.1 Methodology for Analysis

Potential effects on air resources from the Proposed Action and alternatives may occur as a result of emissions of criteria pollutants from the construction, operation and decommissioning of the Proposed Action and alternatives. To assess those effects quantitative emission estimates for criteria pollutants were prepared based on the Applicant provided construction and operation assumptions in order to evaluate the significance of the Proposed Action and alternatives. Additionally, qualitative analyses were performed to determine the significance of potential hazardous air pollutant emissions and odors from the proposed action and alternatives. Emissions and impacts of decommissioning of the proposed project were analyzed qualitatively as well.

4.2.2 CEQA Significance Criteria

The indicators listed below were used to determine the significance of potential impacts to air resources under CEQA. They are based on the significance criteria for air quality listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines and the Imperial County Air Pollution Control District (ICAPCD) CEQA Air Quality Handbook, which state that a project would have a significant impact on air quality if it would:

AR-1 *Conflict with or obstruct implementation of the applicable air quality plan;*

AR-2 *Violate any air quality standard or contribute to an existing or projected air quality violation;*

AR-3 *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);*

AR-4 *Expose the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities and residences) to substantial pollutant concentrations;*

AR-5 *Create objectionable odors affecting a substantial number of people.*

Specifically, implementation of the project would have a significant impact on air quality if it would exceed any of the following adopted thresholds presented in the ICAPCD CEQA Air Quality Handbook, provided below in Table 4.2-1.

In addition, the general conformity *de minimis* thresholds listed in Table 4.2-2 are applicable to the project emissions of nitrogen oxides (NOx), volatile organic compounds (VOCs), and particulate matter under ten microns (PM10) since the proposed project site area is designated as moderate nonattainment of the federal ozone standard and serious nonattainment of the federal PM10 standard, and NOx and VOCs are precursors to atmospheric ozone generation.

Table 4.2-1. Air Quality Regional Thresholds

Pollutant	ICAPCD	
	Construction (lbs/day)	Operation (lbs/day) [a]
CO	550	550
NO2	100	55
PM10	150	150
PM2.5	150 [b]	150 [b]
SO2	--	150
VOC	75	55

Source: ICAPCD, 2007

[a] For industrial development projects, the operations thresholds do not include stationary source equipment that are subject to mitigation according to Rule 207.

[b] Significance threshold for PM10 is used for PM2.5.

Table 4.2-2. General Conformity *de minimis* Thresholds (tons/year)

NOx	100
VOC	100
PM10	70

Source: EPA, 2011

4.2.3 Alternative 1: Proposed Action

4.2.3.1 Direct and Indirect Impacts

Construction

Criteria Pollutant Emissions. Construction of the proposed project would result in emissions of the following air pollutants: VOCs, NOx, carbon monoxide (CO), PM10, particulate matter under 2.5 microns (PM2.5), and sulfur oxides (SOx).

Emissions from construction would result from fuel combustion and exhaust from construction equipment and vehicle traffic, grading, and use of polluting building materials (e.g., paints and lubricants). Fugitive dust emissions would be generated from earth moving activities such as dozing, grading and material loading/handling, and vehicle trips on paved/unpaved roads. Land disturbance during construction would also result in generation of fugitive dust due to wind erosion. Emissions are estimated based on following assumptions and project schedule provided by the Applicant:

- The Proposed Action would include the construction of 155 WTGs, an O&M complex, a substation, and interior unpaved roads necessary to reach all project components.
- Emissions are estimated based on the construction schedule and equipment, and operating equipment and activities provided by the Applicant, with an exception for off-road equipment required for O&M Complex and Substation. Emission estimates were based on estimates from similar projects and those assumptions were reviewed and where necessary edited by the Applicant. The on-road trips include water delivery from Pine Valley, and other raw materials required for the onsite concrete production (fine and coarse aggregate, and cement) from various locations within southern California (please see Appendix G for the specific assumptions). The on-road trip origination points are conservative in some cases as some of the raw materials assumed to be shipped long distances may be obtainable from nearby sources. The number of construction and operation employees is also provided by the Applicant.

- On a daily basis, five delivery truck trips and one heavy heavy delivery truck (HHDT) trip are added to accommodate any miscellaneous deliveries, use of crew trucks, and fuel delivery. In addition, internal project trips, that would involve travel onsite for miscellaneous pickup truck activity, concrete delivery, crew movement to wind turbine generator (WTG) sites and off-road equipment movement, are also added to the total construction vehicle trips.
- Construction is expected to commence in the first quarter of 2012 and the main construction elements are forecast to be completed within 48 weeks/11 months, or just prior to the end of 2012
- In addition to the revisions to the construction schedule, the applicant has identified that the use engine-generators with two different sizes and uses are necessary during the Erection, Energization, and Commissioning phase of construction. The applicant has specified that ten smaller 58kW engines meeting USEPA/CARB Tier 3 emissions standards will be used during the full duration of this construction phase, while two larger 1,500 kW engines that will be registered under and comply with the CARB Portable Equipment Registration Program will be used during a limited portion of this construction phase. Appendix G has the specific use assumptions for these new engine-generators.
- Emissions occurring within Imperial County only are presented in this section. However, it is acknowledged that there will be additional emissions occurring outside of the County, since some of the project-related raw and finished materials and equipment are expected to be delivered from outside of Imperial County.
- There is the potential that the water supply source may change from what has been considered in the emissions calculations. The water source considered in the emissions calculations is Pine Valley which is a 45 mile one-way trip, only 12 miles of which are inside Imperial County. The other potential water sources are from Brawley or Seeley, which have 47 mile and 28 miles one-way trips, respectively, where the entire trip distances are within Imperial County. Therefore, if water comes from Brawley or Seeley the criteria pollutant emissions during construction would increase from what is presented in the emissions tables. Appendix G includes a comparison of the water trucking criteria pollutant emissions within Imperial County for these three potential water sources for all three project alternatives.

Tables 4.2-3 and 4.2-4 summarize the worst-case daily and annual mitigated construction air emissions. Table 4.2-2 compares the maximum mitigated daily construction emissions with the applicable ICAPCD thresholds of significance as shown in Table 4.2-1, while Table 4.2-4 compares the maximum mitigated annual construction emissions with the General Conformity *de minimis* thresholds (40 CFR Part 93.153) as shown in Table 4.2-2.

Table 4.2-3. Maximum Mitigated Daily Construction Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	19.94	136.11	134.30	7.15	5.95	0.29
Off-road Emissions	37.88	409.40	237.36	24.48	22.53	0.63
Fugitive Dust Emissions	---	---	---	484.61	77.24	---
Total	57.76	453.83	371.66	516.24	105.71	0.86
ICAPCD CEQA Threshold	75	100	550	150	150	n/a

Source: Staff Analysis, Appendix G

Table 4.2-4. Maximum Mitigated Annual Construction Emissions (tons/year)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	1.37	7.52	10.12	0.41	0.33	0.02
Off-road Emissions	2.00	18.67	12.67	1.28	1.18	0.03
Fugitive Dust Emissions	---	---	---	44.25	6.94	---
Total	3.36	26.19	22.78	45.94	8.45	0.05
General Conformity Threshold	100	100	n/a	70	n/a	n/a

Source: Staff Analysis, Appendix G

Maximum daily emissions for all criteria pollutants would occur during week 25. Mitigated maximum daily emissions are estimated to be below the thresholds for VOC, CO, PM2.5 and SOx as shown in Table 4.2-3. However, daily construction NOx and PM10 emissions are estimated to exceed the applicable thresholds. Since the construction of the proposed OWEF would result in substantial NOx and PM10 emissions and potentially substantial PM2.5 impacts, Mitigation Measures Air-1 and Air-2 are recommended to minimize air quality impacts to the extent feasible as required by ICAPCD CEQA Air Quality Handbook and ICAPCD Regulation VIII.

ICAPCD CEQA Air Quality Handbook and Regulation VIII recommend that dirt roads within developments be paved. Considering the frequency of possible future use of unpaved roads within the site, paving is not recommended for the roads leading to the WTGs, while paving is recommended for the road leading to the operations and maintenance facility as early during construction as practical. The use of soil binders is recommended on unpaved roads leading to the WTGs for effective fugitive dust emission control. However, even with this mitigation measure the PM10 emissions during construction would exceed the ICAPCD regional significance threshold of 150 lbs/day.

NOx emissions, as an ozone precursor, would have the potential to worsen the air quality in the region where the Project is proposed. Implementation of Mitigation Measure Air-2 would reduce NOx emissions by approximately 40 percent during construction. This mitigation measure would ensure that the proposed project's NOx emissions would be reduced to the maximum extent feasible.

Maximum annual construction emissions would occur in 2012. The general conformity *de minimis* thresholds for VOC, NOx, and PM10 emissions shown in Table 4.2-4 are applicable to the proposed project annual emissions, as the project site area is designated as moderate nonattainment for ozone, and serious nonattainment for PM10. Maximum annual construction emissions would not exceed any of these thresholds.

Hazardous Air Pollutant Emissions. Emissions of hazardous air pollutants (aka air toxics) are very limited for this type of project, and from a health risk perspective are primarily concerned with the emissions of diesel particulate matter (DPM). DPM would be emitted from construction equipment and diesel fueled construction vehicles. Mitigation Measure Air-2 would reduce DPM emissions by requiring the use of newer and cleaner off-road diesel engines.

Odors. Construction equipment may create mildly objectionable odors. The specific potential minor odor sources during construction would include equipment and construction vehicle exhausts, and limited asphalt paving.

Operation and Maintenance

Criteria Pollutant Emissions. Full operation of the project is currently scheduled to start at the beginning of 2013. Operation of the proposed OWEF would result in substantially lower emissions than project construction, since the project would not have any major stationary emission sources. Operation emissions of the proposed OWEF would be limited to maintenance activities and vehicle trips required for operation/maintenance and a 100-hp propane-fueled emergency generator engine. Fugitive dust emissions during operation would be generated mostly from employee and maintenance vehicle trips and road grading activities. Roads would be re-graded as needed due to sedimentation deposit from storm water runoff. The Applicant provided an assumption that 10 percent of the new unpaved roads would require annual re-grading. Operational emissions are estimated based on the maintenance activities and equipment provided by the Applicant.

There is the potential that the water supply source may change from what has been considered in the emissions calculations. The water source considered in the emissions calculations is Pine Valley which is a 45 mile one-way trip, only 12 of which are inside Imperial County. The other potential water sources are from Brawley or Seeley, which have 47 mile and 28 miles one-way trips, respectively, where the entire trip distances are within Imperial County. Therefore, if water comes from Brawley or Seeley the criteria pollutant emissions during operation would increase marginally from what is presented in the emissions tables. Appendix G includes a comparison of the water trucking criteria pollutant emissions within Imperial County for these three potential water sources.

Tables 4.2-5 and 4.2-6 summarize the worst-case daily and annual mitigated operation air emissions in comparison to the applicable ICAPCD thresholds of significance and General Conformity *de minimis* thresholds, respectively, as shown in Tables 4.2-1 and 4.2-2.

Table 4.2-5. Maximum Mitigated Daily Operation Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	1.08	4.06	8.87	0.25	0.19	0.02
Off-road Emissions	1.19	9.24	7.36	0.71	0.66	0.02
Emergency Engine Generator	0.99	1.67	1.55	0.06	0.06	0.00
Fugitive Dust Emissions	---	--	---	116.43	14.35	---
Total	3.27	14.97	17.77	117.45	15.26	0.04
Threshold	55	55	550	150	150	n/a

Source: Staff Analysis, Appendix G

Table 4.2-6. Maximum Mitigated Annual Operation Emissions (tons/year)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	0.14	0.25	1.32	0.02	0.01	0.00
Off-road Emissions	0.05	0.36	0.32	0.03	0.03	0.00
Emergency Engine Generator	0.03	0.04	0.04	0.00	0.00	0.00
Fugitive Dust Emissions	---	---	---	8.45	1.34	---
Total	0.22	0.66	1.69	8.50	1.39	0.00
General Conformity Threshold	100	100	n/a	70	n/a	n/a

Source: Staff Analysis, Appendix G

As shown in Table 4.2-5, with mitigation, operation emissions for all criteria pollutants would be well below the applicable significance thresholds adopted by Imperial County.

Mitigation Measures Air-3 and Air-4 are recommended to reduce particulate emissions to the extent feasible in accordance with ICAPCD rules and regulations and to ensure that the PM10 emission would be below the ICAPCD regional significance threshold of 150 lbs/day.

Implementation of Mitigation Measure Air-4 would reduce NOx emissions by approximately 40 percent. This mitigation measure would ensure that the proposed project's DPM and NOx emissions are reasonably mitigated.

The proposed OWEF would also result in an indirect emission reduction associated with the reduction of fossil-fuel fired power plant electricity generation due to the proposed project displacing the need for their operation. However, the exact nature and location of such reductions is not known, and would certainly not occur near the project area.

The general conformity *de minimis* thresholds for VOC, NOx, and PM10 emissions shown in Table 4.2-6 are applicable to the proposed project annual emissions, as the project site area is designated as moderate nonattainment for ozone, and serious nonattainment for PM10. Maximum annual operation emissions would not exceed any of these thresholds.

Hazardous Air Pollutant Emissions. DPM is a primary hazardous air pollutant. Sources of DPM emissions during operation include operation/maintenance equipment, such as crane and forklift, and diesel fueled vehicles. DPM emissions during operation would be very limited, considering the frequency of the equipment use, and total vehicle miles traveled; and would also be reduced through compliance with proposed Mitigation Measure Air-4.

Odors. Exhaust from off-road equipment and on-road vehicle use during project operation would not be expected to create objectionable odors.

Decommissioning

Criteria Pollutant Emissions. Decommissioning of the proposed project would require disassembly of wind turbine generators, demolition of on-site buildings, and removal of perimeter fencing. After removal of equipment and buildings, the site would need to be re-vegetated. Equipment used for decommissioning would generally be similar to that used for construction, except that no grading or clearing would be required. Since decommissioning does not involve grading or clearing activities, the level of fugitive dust emissions would be less than emissions created during construction. In addition, the site is likely to be re-vegetated, which would further reduce fugitive dust emissions. Because decommissioning would occur after serving at least 30 years, it is likely that equipment engine technology would be more advanced and fuel would be cleaner. Therefore, criteria pollutant emissions during decommissioning would be significantly less than the emissions estimated for project construction.

Hazardous Air Pollutant Emissions. Similar to criteria pollutant emissions, hazardous air pollutant emissions during decommissioning would be less than during construction due to advanced equipment engine technology and cleaner fuel.

Odors. Exhaust from off-road equipment and on-road vehicles used during decommissioning and construction vehicle trips would not be expected to create objectionable odors.

4.2.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, and Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.2.2.

Construction

- **AR-1.** The ICAPCD ozone plan includes recommendations for measures to control ROG/VOC and NOx emissions generated from stationary and mobile sources. It is recommended that the proposed OWEF implement Mitigation Measure Air-2 to mitigate NOx emissions in conformance with the ICAPCD ozone plan. The ICAPCD PM10 SIP focuses on the reduction of fugitive dust emissions and recommends mitigation measures for project construction and operation. It is recommended that the proposed project implement Mitigation Measure Air-1 in conformance with the ICAPCD PM10 SIP. Implementation of Mitigation Measures Air-1 and Air-2 would ensure that the proposed project conforms with the ICAPCD ozone and PM10 attainment plans and that the project would have less-than-significant impacts after mitigation.

- **AR-2.** As shown in Table 4.2-3, construction emissions of VOC, CO, PM2.5 and SOx would be below the applicable ICAPCD thresholds of significance. However, emissions of NOx and PM10 during construction would exceed the ICAPCD thresholds even after implementing Mitigation Measures Air-1 and Air-2, and these emission levels could cause localized exceedances, or contribute significantly to existing exceedances, of the State or federal air quality standards. Therefore, the proposed project would have temporary significant and unavoidable NOx and PM10 impacts during construction.
- **AR-3.** As noted in Table 3.2-3 in Section 3.2 Air Resources, the proposed project site area is moderate nonattainment for the State and federal ozone standards, serious nonattainment for the federal PM10 standard, and nonattainment of the State PM10 standard. Implementation of Mitigation Measures Air-1 and Air-2 would reduce fugitive dust emissions and engine NOx emissions. However, as shown above in Table 4.2-3 the daily construction NOx and PM10 emissions would exceed the ICAPCD thresholds, resulting in a cumulatively considerable net increase of NOx and PM10 during project construction. Therefore, the proposed project would have temporary significant and unavoidable NOx and PM10 impacts during construction.
- **AR-4.** One residence is located within the project boundary on the private lands leased by the Applicant; this residence is not considered a sensitive receptor as they have accepted the construction and operation of the project as part of agreement in leasing their lands to the Applicant. As such, the nearest sensitive receptor is the residence located approximately 690 feet from the closest proposed on-site road and 2,800 feet from the closest proposed wind turbine. The Ocotillo Community Park and the Jacumba Wilderness Area, located approximately 2,960 feet east of the nearest wind turbine and approximately 2,060 feet south of the nearest proposed wind turbine, respectively, are also considered to be sensitive receptors. The closest school is Jacumba Elementary School, located approximately 14.5 miles west southwest of the project site, and the closest hospital, El Centro Regional Medical Center, is located approximately 25 miles east north east of the project site. Due to the long distances from the project site, both the school and hospital are not considered as sensitive receptors for the proposed project.

  As shown above in Table 4.2-3, construction emissions of VOC, CO, PM2.5 and SOx would be within the applicable ICAPCD thresholds and would not affect nearby sensitive receptors. Construction NOx and PM10 emissions are expected to exceed the applicable significant thresholds even after mitigated. Based on these exceedances, it is anticipated that the proposed OWEF would generate high levels of localized NOx and PM10 emissions. Therefore construction NOx and PM10 emissions would create temporary unavoidable significant impacts to the nearby residents and the users of the Ocotillo Community Park. These impacts on residential receptors would vary depending on the location, level, and type of activity, the silt content of the soil, and the prevailing weather. In addition, the project's construction emissions, specifically the construction dust emissions, could also impact sensitive plant species and create temporary visual impacts.

- **AR-5.** Use of construction equipment and limited asphalt paving may create mild odors. Construction odors would be temporary, are not overly offensive, are types of odors regularly experienced by the public, and so would not negatively affect a substantial number of people. Therefore, the odor impacts from the project construction are less than significant.

Operation and Maintenance

- **AR-1.** The proposed project does not include any major stationary emission sources and only requires minimal operation activities. In addition, the proposed OWEF would implement Mitigation Measures Air-3 and Air-4 to mitigate NOx and particulate matter emissions during operation. Therefore, the operation of the Project would not conflict with or obstruct implementation of the ICAPCD air quality plans.
- **AR-2.** As shown in Table 4.2-5, operation emissions for all criteria pollutants would remain well under the applicable thresholds of significance. Such levels of emissions should not cause localized exceedances, or contribute significantly to existing exceedances, of the State or federal air quality standards. Therefore, the proposed project would have less-than-significant impacts on air quality standard attainment during operation.
- **AR-3.** Operation of the proposed OWEF would result in substantially lower emissions than project construction and would be well below the ICAPCD thresholds of significance (see Table 4.2-5). Therefore, project's operation emissions would not result in cumulatively considerable net increases of nonattainment pollutants and would have less-than-significant impacts to regional air quality.
- **AR-4.** As shown in Table 4.2-5, the project's operation emissions are minimal after implementation of mitigation measures Air-3 and Air-4, so the project would have less-than-significant impacts to area receptors during operation.
- **AR-5.** Use of operation equipment may create mild odors. Operation odors would be minimal due to the low number of sources and lack of any significant odor producing source. Therefore, the odor impacts from the project operation are less than significant.

Decommissioning

- **AR-1.** It is assumed that the decommissioning activities will be approved in a manner that would conform to the requirements of applicable air quality plans, if any exist, at the time of project decommissioning. Therefore, the project would have less-than-significant impacts.
- **AR-2.** The magnitude of decommissioning emissions are expected to be significantly less than those estimated for project construction since decommissioning would occur after at least 30 years of operation, and it is expected that on-road and off-road equipment engine technology would be far more advanced and cleaner than is currently the case. Additionally, the level of activity needed to decommission the WTGs is less than the level of activity needed to construct the WTGs and can be done at a more leisurely pace than the expedited construction pace forecast for the proposed project's construction. Although the ambient air quality attainment status for the project area at the time of project decommissioning is unknown, the proposed OWEF decommissioning emissions are not expected to cause or significantly contribute to any air quality violations, and would have less-than-significant impacts on air quality standard attainment.

- **AR-3.** Due to the reduced activity, and expected reduced emission profile of vehicles when decommissioning would occur, is anticipated that decommissioning emissions of the proposed OWEF can be kept below the ICAPCD CEQA significance thresholds. Therefore, project's decommissioning emissions would not result in cumulatively considerable net increases of nonattainment pollutants and would have less-than-significant impacts to regional air quality.
- **AR-4.** Coyote Wells Specific Plan project, which includes limited new residential development, is proposed within a mile of the proposed OWEF (described in Section 4.2.9). Therefore, it is likely that there would be additional residential receptors located within a mile of the project site at the time of project decommissioning. Any receptors located near to the proposed OWEF site would have increased air pollutant exposures from project decommissioning; however, as noted above, the level of emissions during decommissioning are expected to be substantially lower than those from project construction, and during decommissioning the project owner would have to comply with District rules and regulations and recommended Mitigation Measure Air-3 that address fugitive dust control. Therefore, the air quality impacts resulting from project decommissioning to the public, including sensitive residential receptors, are expected to be less than significant.
- **AR-5.** Use of decommissioning equipment may create mild odors. Odors during decommissioning would be temporary, are not overly offensive, are types of odors regularly experienced by the public, and so would not negatively affect a substantial number of people. Therefore, the odor impacts from the project decommissioning would be less than significant.

4.2.4 Alternative 2: 137 Wind Turbine Generators

4.2.4.1 Direct and Indirect Impacts

Construction activities associated with Alternative 2 would be slightly less than the Proposed Action due to the reduced number of wind turbine generators to be installed. The applicant has indicated that the construction duration would be the same for all project alternatives, but the average daily activity would be reduced since there are fewer WTGs to be constructed over the 11-month construction schedule. Operation/maintenance activities required would be similar to the Proposed Action, but would also be reduced somewhat due to a reduction in the number of WTGs and associated infrastructure.

Construction

Criteria Pollutant Emissions. Total construction emissions associated with Alternative 2 would be slightly less than the Proposed Action due to the reduced number of wind turbine generators. Maximum daily construction emissions would occur during week 25. Construction elements for the WTG construction and O&M Complex and Substation construction would remain the same as those for the Proposed Action.

Tables 4.2-7 and 4.2-8 summarize the worst-case daily and annual mitigated construction air emissions in comparison to the applicable ICAPCD thresholds of significance and General Conformity *de minimis* thresholds, respectively, as shown in Tables 4.2-1 and 4.2-2. Detailed assumptions are included in Appendix G.

Table 4.2-7. Maximum Mitigated Daily Construction Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	18.69	131.56	123.87	6.88	5.73	0.28
Off-road Emissions	33.54	372.52	212.00	21.74	20.00	0.57
Fugitive Dust Emissions	---	---	---	422.63	70.35	---
Total	52.17	412.40	335.86	471.24	96.07	0.78
Threshold	75	100	550	150	150	n/a

Source: Staff Analysis, Appendix G

Table 4.2-8. Maximum Mitigated Annual Construction Emissions (tons/year)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	1.35	7.69	9.95	0.40	0.33	0.02
Off-road Emissions	1.74	16.29	11.06	1.12	1.03	0.03
Fugitive Dust Emissions	---	---	---	41.07	6.42	---
Total	3.09	23.98	21.01	42.59	7.78	0.05
General Conformity Threshold	100	100	n/a	70	n/a	n/a

Source: Staff Analysis, Appendix G

Hazardous Air Pollutant Emissions. Emissions of hazardous air pollutants (aka air toxics) are very limited for this type of project, and from a health risk perspective are primarily concerned with the emissions of diesel particulate matter (DPM). DPM would be emitted from construction equipment and diesel fueled construction vehicles. Mitigation Measure Air-2 would reduce DPM emissions by requiring the use of newer and cleaner off-road diesel engines.

Odors. Construction equipment may create mildly objectionable odors. The specific potential minor odor sources during construction would include equipment and construction vehicle exhausts, and limited asphalt paving.

Operation and Maintenance

Criteria Pollutant Emissions. Operation of Alternative 2 would result in slightly less total criteria pollutant emissions compared to the Proposed Action. However, maximum daily on-road and off-road operation emissions would remain the same since the maximum daily operational activities are not assumed to change. Maximum daily fugitive dust emissions are slightly lower due to the reduced amount of disturbed acres subject to wind erosion. Annual maintenance efforts for WTGs and access roads are assumed to be reduced proportionally to the number of WTGs. The number of employees required for operation and maintenance and the number of maintenance vehicle trips are assumed the same as what are assumed for the Proposed Action.

Tables 4.2-9 through 4.2-10 summarize the worst-case daily and annual mitigated operation air emissions in comparison to the applicable ICAPCD thresholds of significance and General Conformity *de minimis* thresholds, respectively, as shown in Tables 4.2-1 and 4.2-2. Detailed assumptions are included in Appendix G.

Table 4.2-9. Maximum Mitigated Daily Operation Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	1.08	4.06	8.87	0.25	0.19	0.02
Off-road Emissions	1.19	9.24	7.36	0.71	0.66	0.02
Emergency Engine Generator	0.99	1.67	1.55	0.06	0.06	0.00
Fugitive Dust Emissions	---	--	---	115.28	14.12	---
Total	3.27	14.97	17.77	116.30	15.03	0.04
Threshold	55	55	550	150	150	n/a

Source: Staff Analysis, Appendix G

Table 4.2-10. Maximum Mitigated Annual Operation Emissions (tons/year)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	0.14	0.24	1.31	0.02	0.01	0.00
Off-road Emissions	0.05	0.32	0.29	0.03	0.03	0.00
Emergency Engine Generator	0.03	0.04	0.04	0.00	0.00	0.00
Fugitive Dust Emissions	---	---	---	7.82	1.26	---
Total	0.21	0.61	1.64	7.87	1.30	0.00
General Conformity Threshold	100	100	n/a	70	n/a	n/a

Source: Staff Analysis, Appendix G

Hazardous Air Pollutant Emissions. Diesel particulate matter (DPM) is a primary hazardous air pollutant. Sources of DPM emissions during operation include operation/maintenance equipment, such as crane and forklift, and diesel fueled vehicles. DPM emissions during operation would be very limited, considering the frequency of the equipment use, and total vehicle miles traveled; and would also be reduced through compliance with proposed Mitigation Measure Air-4.

Odors. Exhaust from off-road equipment and on-road vehicle use during project operation would not be expected to create objectionable odors.

Decommissioning

Criteria Pollutant Emissions. Decommissioning of Alternative 2 would require the same types of activities and equipment as described for the Proposed Action. Because decommissioning would occur after serving at least 30 years, it is likely that equipment engine technology would be more advanced and fuel would be better. In addition, Alternative 2 would require disassembly of fewer wind turbine generators, therefore criteria pollutant emissions during decommissioning of Alternative 2 would be slightly less than the emissions for decommissioning of the Proposed Action.

Hazardous Air Pollutant Emissions. Similar to criteria pollutant emissions, hazardous air pollutant emissions during decommissioning would be less than that during construction due to advanced equipment engine technology and cleaner fuel.

Odors. Exhaust from off-road equipment and on-road vehicles use during decommissioning and construction vehicle trips would not be expected to create objectionable odors.

4.2.4.2 CEQA Significance Determinations

CEQA significance for Alternative 2 would be identical to that of the Proposed Action as described in Section 4.2.3.2 above.

4.2.5 Alternative 3: 105 Wind Turbine Generators

4.2.5.1 Direct and Indirect Impacts

Construction activities associated with Alternative 3 would be less than the Proposed Action due to the reduced number of wind turbine generators to be installed. The applicant has indicated that the construction duration would be the same for all project alternatives, but the average daily activity would be reduced since there are fewer WTGs to be constructed over the 11-month construction schedule. Operation/maintenance activities required would be similar to the Proposed Action, but would also be somewhat reduced due to a reduction in the number of WTGs and associated infrastructure.

Construction

Criteria Pollutant Emissions. Total construction emissions associated with Alternative 3 would be less than the Proposed Action due to the reduced number of wind turbine generators. Maximum daily construction emissions would occur during week 25. Construction elements for the WTG construction and O&M Complex and Substation construction would remain the same as those for the Proposed Action.

Tables 4.2-11 and 4.2-12 summarize the worst-case daily and annual mitigated construction air emissions in comparison to the applicable ICAPCD thresholds of significance and General Conformity *de minimis* thresholds, respectively, as shown in Tables 4.2-1 and 4.2-2. Detailed assumptions are included in Appendix G.

Table 4.2-11. Maximum Mitigated Daily Construction Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	16.63	125.83	105.91	6.50	5.45	0.25
Off-road Emissions	28.69	331.46	183.66	18.67	17.18	0.49
Fugitive Dust Emissions	---	---	---	366.22	57.70	---
Total	45.26	365.61	289.57	391.39	80.33	0.67
Threshold	75	100	550	150	150	n/a

Source: Staff Analysis, Appendix G

Table 4.2-12. Maximum Mitigated Annual Construction Emissions (tons/year)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	1.11	6.44	8.13	0.33	0.27	0.02
Off-road Emissions	1.43	13.21	8.09	0.84	0.77	0.02
Fugitive Dust Emissions	---	---	---	33.13	5.16	---
Total	2.54	19.65	16.21	34.31	6.21	0.04
General Conformity Threshold	100	100	n/a	70	n/a	n/a

Source: Staff Analysis, Appendix G

Hazardous Air Pollutant Emissions. Emissions of hazardous air pollutants (aka air toxics) are very limited for this type of project, and from a health risk perspective are primarily concerned with the emissions of diesel particulate matter (DPM). DPM would be emitted from construction equipment and diesel fueled construction vehicles. Mitigation Measure Air-2 would reduce DPM emissions by requiring the use of newer and cleaner off-road diesel engines.

Odors. Construction equipment may create mildly objectionable odors. The specific potential minor odor sources during construction would include equipment exhaust, construction vehicle exhausts, and limited asphalt paving.

Operation and Maintenance

Criteria Pollutant Emissions. Annual operation emissions of Alternative 3 would be less than those of the Proposed Action. However, maximum daily on-road and off-road operation emissions would remain the same since the maximum daily operational activities are not assumed to change. Maximum daily fugitive dust emissions are slightly lower due to the reduced amount of disturbed acres subject to wind erosion. Annual maintenance efforts for WTGs and access roads are assumed to be reduced proportionally to the number of WTGs. The number of employees required for operation and maintenance and the number of maintenance vehicle trips are assumed the same as what are assumed for the Proposed Action.

Tables 4.2-13 through 4.2-14 summarize the worst-case daily and annual mitigated operation air emissions in comparison to the applicable ICAPCD thresholds of significance and General Conformity *de minimis* thresholds, respectively, as shown in Tables 4.2-1 and 4.2-2. Detailed assumptions are included in Appendix G.

Table 4.2-13. Maximum Mitigated Daily Operation Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	1.08	4.06	8.87	0.25	0.19	0.02
Off-road Emissions	1.19	9.24	7.36	0.71	0.66	0.02
Emergency Engine Generator	0.99	1.67	1.55	0.06	0.06	0.00
Fugitive Dust Emissions	---	--	---	111.30	13.30	---
Total	3.27	14.97	17.77	112.33	14.21	0.04
Threshold	55	55	550	150	150	n/a

Source: Staff Analysis, Appendix G

Table 4.2-14 Maximum Mitigated Annual Operation Emissions (tons/year)

	VOC	NOx	CO	PM10	PM2.5	SOx
On-road Emissions	0.14	0.22	1.29	0.02	0.01	0.00
Off-road Emissions	0.04	0.25	0.22	0.02	0.02	0.00
Emergency Engine Generator	0.03	0.04	0.04	0.00	0.00	0.00
Fugitive Dust Emissions	---	---	---	6.35	1.04	---
Total	0.20	0.51	1.55	6.39	1.07	0.00
General Conformity Threshold	100	100	n/a	70	n/a	n/a

Source: Staff Analysis, Appendix G

Hazardous Air Pollutant Emissions. Diesel particulate matter (DPM) is a primary hazardous air pollutant. Sources of DPM emissions during operation include operation/maintenance equipment, such as crane and forklift, and diesel-fueled vehicles. DPM emissions during operation would be very limited, considering the frequency of the equipment use, and total vehicle miles traveled; and would also be reduced through compliance with proposed Mitigation Measure Air-4.

Odors. Exhaust from off-road equipment and on-road vehicle use during project operation would not be expected to create objectionable odors.

Decommissioning

Criteria Pollutant Emissions. Decommissioning of Alternative 3 would require the same types of activities and equipment as described for the Proposed Action. Because decommissioning would occur after serving at least 30 years, it is likely that equipment engine technology would be more advanced and fuel would be better. In addition, Alternative 3 would require disassembly of fewer wind turbine generators, therefore criteria pollutant emissions during decommissioning of Alternative 3 would be slightly less than the emissions for decommissioning of the Proposed Action.

Hazardous Air Pollutant Emissions. Similar to criteria pollutant emissions, hazardous air pollutant emissions during decommissioning would be less than that during construction due to advanced equipment engine technology and cleaner fuel.

Odors. Exhaust from off-road equipment and on-road vehicles used during decommissioning and construction vehicle trips would not be expected to create objectionable odors.

4.2.5.2 CEQA Significance Determinations

CEQA significance for Alternative 3 would be identical to that of the Proposed Action as described in Section 4.2.3.2 above.

4.2.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.2.6.1 Direct and Indirect Impacts

Under this alternative, the proposed project would not be approved and BLM would not amend the CDCA Plan. As a result, no wind energy projects would be constructed on the project site and BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan. The results of the No Action Alternative would be the following:

- The impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's land use plan, including another renewable energy project.
- The benefits of the proposed project in reducing fossil fuel use and greenhouse gas emissions from gas-fired generation would not occur. Both State and Federal law support the increased use of renewable power generation.

If the proposed project is not approved, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Several dozen wind and solar development applications for use of BLM land have been submitted for approximately one million acres of the CDCA. Additional BLM land in Nevada and Arizona also has applications for wind and solar projects.

4.2.6.2 CEQA Significance Determinations

Under this Alternative the air quality of the site is not expected to change noticeably from existing conditions and, as such, this No Action Alternative would not result in the air quality impacts or benefits described for Alternatives 1-3. However, in the absence of this project, other renewable energy projects may be constructed to meet State mandates at other locations, and those projects could result in impacts at those locations.

4.2.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.2.7.1 Direct and Indirect Impacts

Under this alternative, the proposed Project would not be approved and the BLM would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the project site and BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would continue to remain in its existing condition, with no new structures or facilities constructed or operated on the site.

4.2.7.2 CEQA Significance Determinations

Under this Alternative the air quality of the site is not expected to change noticeably from existing conditions and, as such, this No Project Alternative would not result in the air quality impacts or benefits described for Alternatives 1-3. However, in the absence of this project, other renewable energy projects may be constructed to meet State mandates at other locations, and those projects could have similar impacts as the proposed project at those locations.

4.2.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.2.8.1 Direct and Indirect Impacts

Under this Alternative, the proposed project would not be approved and BLM would amend the CDCA Plan to allow for other wind energy projects on the site. As a result, it is possible that another wind energy project could be constructed on the project site.

Because the CDCA Plan would be amended, it is possible that the site would be developed with the same or a different wind energy technology. As a result, air pollutant emissions and impacts would result from the construction and operation of the wind energy technology and would likely be similar to the air quality impacts from the proposed project. Different wind technologies require different amounts of construction and operations maintenance; however, the benefits of the proposed project in displacing fossil fuel fired generation and reducing associated pollutant emissions could occur with a different wind energy technology at this site and therefore with this alternative.

4.2.8.2 CEQA Significance Determinations

This Alternative could result in future air quality impacts and benefits similar to Alternatives 1-3.

4.2.9 Cumulative Impacts

4.2.9.1 Geographic Extent/Context

The geographic scope for air quality cumulative impacts is a six-mile radius for regionally based impacts and a one-mile radius for sensitive receptor impacts. These geographic scopes of analysis are appropriate for air quality due to Statewide, regional, and localized nature of air quality impacts that could occur cumulatively. Additionally, only projects that are scheduled concurrently in the same area as the proposed OWEF are considered as projects that could contribute to cumulative impacts.

The identification of cumulative projects for air quality generally ranges from within one mile of a proposed project to as far as six miles or more from a proposed project because the effect of downwind dispersion eliminates the potential for project-level significant cumulative air quality impacts over areas larger than a few miles. Specifically, it has been determined that the cumulative impacts to regional ambient air quality concentrations from projects more than six miles apart are minimal due to the dispersion that would occur over that distance. The emission sources for this project are all ground-based with minimal exhaust plume buoyancy, so the impacts from the project emissions will be highest at the project fence line and will decrease rapidly with distance. The California Energy Commission typically applies a six-mile radius for its air quality cumulative analyses for fossil-fuel fired power plant operating emissions, so this standard is considered conservative for this much cleaner renewable energy project.

For the emissions of any two or more projects to have the potential for cumulative downwind concentrations at any given fixed sensitive receptor location, they must both be in close proximity to limit the downwind dispersion from one site to the other and generally one of the projects must be able to cause an air quality standard exceedance on its own (conservation of mass principles generally dictate that two exhaust plumes of stable criteria pollutants do not add concentration, they mix concentration with the plume of highest concentration being diluted by the plume with the lower concentration). Therefore, only projects within one mile of the Proposed Action are considered projects that could, with the Proposed Action, cause cumulative impacts to the fixed sensitive receptor locations.

The cumulative localized air quality emission impacts from multiple sources are not always directly additive as the location of the sources, the distance between sources, and actual wind direction will reduce the time when emissions will cumulatively impact any single receptor location. Generally, these localized impacts are most likely to have additive effects when the emissions from one or more of the cumulative sources are singularly causing adverse localized impacts.

The regional air quality emissions impacts from cumulative projects should also consider the other regional efforts to improve air quality. In this case the regional area will benefit from the continued reduction in mobile source emissions due to ongoing federal and state on-road and off-road engine emission reduction and fuel improvement programs, other efforts being undertaken by ICAPCD to meet state and federal air quality standards, and efforts being undertaken in Mexico to reduce transport of emissions from border cities such as Mexicali.

4.2.9.2 Existing Cumulative Conditions

Current area designations for criteria air pollutants represent the existing cumulative conditions for the project site area. The project site area within the Salton Sea Air Basin (SSAB) is designated as nonattainment for the federal and state ozone and PM10 standards. The project area is designated as attainment or unclassified for the state and federal CO, NOx, SOx, and PM2.5 standards. Historical data of ozone and PM10 presented in Table 3.2-4 shows continuous exceedances over the past three years of available air quality data (2007-2009).

4.2.9.3 Reasonably Foreseeable Projects

Tables 4.1-1 and 4.1-2 provide a list of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. The reasonably foreseeable projects that are located within the geographic area of effect for cumulative impacts are presented in Table 4.1-2 and listed below:

- Coyote Wells Specific Plan
- Sunrise Powerlink
- Renewergy, LLC proposed wind testing
- SDG&E proposed Ocotillo Sol Photovoltaic Solar Field

The Coyote Wells Specific Plan proposes to develop a 944-acre site in the southwestern Imperial County (Wind Zero, 2011a). It is anticipated that the Coyote Wells Specific Plan would be fully implemented in three phases over nine years. Phase I of the Coyote Wells Specific Plan project was anticipated to begin construction in fall 2011 and finish in summer 2012 (Zero Wind, 2011b). The start of this project has been delayed, but to be conservative it is still assumed to begin construction during the OWEF construction period. Phase II is anticipated to begin in summer 2015 and be completed in spring 2016. The last phase is anticipated to begin in summer 2018 and be completed in fall 2019 (Wind Zero, 2011b). The Sunrise Powerlink transmission line project traverses southeastern San Diego County and southwestern Imperial County, passing through the project site area, within the one- and six-mile radius from the project, as well. Sunrise Powerlink started construction in September 2010 (CPUC, 2011) and construction in the Ocotillo area was recently completed. However, construction of the Sunrise Powerlink continues along other portions of the transmission line alignment.

The Renewergy LLC project is a proposed wind testing project to construct meteorological towers on a 3,912-acre site, near the proposed OWEF project site. Future wind energy development at this site could occur but it is not currently proposed and would not occur prior to OWEF operation. The construction schedule for this project is not currently available. SDG&E's proposed Ocotillo Sol Photovoltaic Solar Field project would produce 15 to 18 MW of solar energy occupying 100 acres of federal land directly adjacent to the SDG&E Imperial Valley substation, approximately 15 miles east of the proposed OWEF project site. Construction of this project is expected to start in early 2013 and last approximately six months.

4.2.9.4 Construction

Construction of the OWEF and construction of the Coyote Wells Specific Plan project may occur concurrently, and emissions from these projects would cumulatively affect local and regional air quality.

Phase I of the Coyote Wells Specific Plan project was anticipated to begin construction in fall 2011 and finish in summer 2012 (Wind Zero, 2011b). The start of this project has been delayed, but to be conservative it is still assumed to begin construction during the OWEF construction period. Any construction activities associated with the Coyote Wells Specific Plan in 2012 would overlap with the proposed OWEF construction. Table 4.2-15 provides the Phase 1 construction emissions estimated for the Coyote Wells Specific Plan. Emissions presented in this table do not specifically represent emissions from the activities that would occur concurrently with the OWEF, but represents the overall construction emissions from the Coyote Wells Specific Plan.

Table 4.2-16. Coyote Wells Specific Plan – Mitigated Daily Emissions from Phase 1 (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
Fine Grading	4	28	16	4	2	0
Trenching	3	15	11	1	1	0
Paving	9	21	11	2	1	0
Construction	7	30	74	2	2	0
Coating	0	0	0	0	0	0
Total	23	94	112	9	6	0

Source: Wind Zero 2011a, Total emissions calculated by Staff.

Due to the lack of available information and the complexity of emission estimates, it is difficult to estimate emissions from the Coyote Wells Specific Plan that would cumulatively affect local and regional air quality with the OWEF. However, based on the magnitude of available emissions estimates and that the daily construction PM10 and NOx emissions of the proposed project would exceed the ICAPCD CEQA significance thresholds and create temporary adverse regional and localized impacts, the OWEF and Coyote Wells Specific Plan would have cumulatively significant unavoidable air quality impacts. The proposed OWEF area is currently non-attainment of the federal and state PM10 and ozone standards and is projected to remain so through completion of the proposed OWEF construction. Therefore, the proposed OWEF's construction emissions along with the addition of the other cumulative project emissions during OWEF construction would only exacerbate these adverse ambient air quality impacts.

4.2.9.5 Operation and Maintenance

The proposed OWEF would start full operation in 2013. Operation of the project would not have any major stationary emission sources, and would only require minor maintenance activities and vehicles trips for operation/maintenance. The Coyote Wells Specific Plan project would begin partial "operation" after completion of its Phase I construction, which was originally anticipated to be in summer of 2012. The Final EIR for the Coyote Wells Specific Plan does not identify any major stationary emission sources in Phase I; however, it includes stationary air emission sources such as wastewater treatment and reclamation plant in Phase 3. Construction of Phase 3 would be completed by fall 2019. The Final EIR for the Coyote Wells Specific Plan indicates that the long-term unmitigated operating emissions would have significant VOC, NOx, and CO impacts as shown in Table 4.2-17. Most on-road vehicle emissions would occur outside of the proposed OWEF project site area, therefore only a small portion of estimated on-road vehicle emissions would have cumulative impacts combined with the proposed OWEF operation emissions. The Final EIR for the Coyote Wells Specific Plan includes mitigation measures to reduce operation emissions to the extent feasible, but does not provide mitigated operation emission estimates. However, according to the Final EIR, operation impacts would be less than significant after proposed mitigation.

Table 4.2-17. Coyote Wells Specific Plan – Unmitigated Daily Operation Emissions (lbs/day)

	VOC	NOx	CO	PM10	PM2.5	SOx
Stationary Sources	24	11	43	4	3	0
On-road vehicles	68	342	911	36	23	0
Atypical Sources	11	20	n/a	n/a	n/a	n/a
Total *	103	373	954	40	74	0

Source: Wind Zero 2011a
* Includes emissions from weekend peak activity scenario

The Sunrise Powerlink operations would consist of very minor inspection and maintenance activities with minimal air pollutant emissions. Since operation emissions for the Sunrise Powerlink are anticipated to be minimal, the Final EIR/EIS for this project does not discuss operation impacts of the project quantitatively. Although operation emission estimates for the Renewergy LLC project and the SDG&E Proposed Photovoltaic Solar Field project are not available, it is foreseeable that these two projects would only generate a minimal level of operation emissions, considering that both projects would only require very minor inspection and maintenance activities. Both projects are expected to have no stationary emission sources.

Considering that the operation emissions of the proposed OWEF are minimal, and the emissions from the cumulative projects do not have significant impacts, it is anticipated that cumulative emissions during OWEF operation would not adversely affect regional or local air quality.

4.2.9.6 Decommissioning

The magnitude of decommissioning emissions are expected to be significantly less than those estimated for project construction since decommissioning would occur after at least 30 years of operation, and it is expected that on-road and off-road equipment engine technology would be more advanced and cleaner than is currently the case. Additionally, the level of activity needed to decommission the WTGs is less than the level of activity needed to construct the WTGs, it would not involve grading or clearing activities required during project construction, and can be done at a more leisurely pace than the expedited construction pace forecast for the proposed project's construction. Therefore, the proposed OWEF decommissioning emissions, along with the other cumulative project emissions would not adversely affect regional or local air quality.

4.2.9.7 CEQA Significance Determinations

Significance conclusions for the cumulative impacts identified for each phase of the project (Construction, Operation and Maintenance, and Decommissioning) are presented below, based on the CEQA Significance Criteria presented Section 4.2.2.

Construction

- **AR-1.** As concluded above, the proposed OWEF would not conflict with or obstruct implementation of the applicable air quality plan. In addition, the FEIR of the Coyote Wells Specific Plan project indicates that that the Coyote Wells Specific Plan project would have a less than significant impact. These two projects would not have any collective impacts that will conflict with or obstruct implementation of the applicable air quality plans. Therefore, cumulative impacts would be less than significant.

- **AR-2.** The proposed OWEF would have significant and avoidable impacts NOx and PM10 impacts related to air quality standards during construction, and the addition of emissions from the cumulative projects would only worsen the air quality impacts. Therefore, the cumulative NOx and PM10 impacts would be significant and unavoidable, and the contribution of the proposed OWEF would also be significant and unavoidable.
- **AR-3.** The proposed OWEF exceeds the ICAPCD CEQA significance thresholds for NOx and PM10, and the addition of emission from cumulative projects would only increase those exceedances. Therefore, the cumulative NOx and PM10 impacts would be significant and unavoidable, and the contribution of the proposed OWEF would also be significant and unavoidable.
- **AR-4.** It is anticipated that the proposed OWEF would periodically generate a high level of localized NOx and PM10 emissions and the overlapping construction activities of the two identified cumulative projects would only increase the potential for localized air quality impacts. Therefore, there would be significant and unavoidable cumulative construction impacts to the local residents and other local public receptors.
- **AR-5.** The proposed OWEF and the Coyote Wells Specific Plan project would have less than significant odor impacts. Therefore, the cumulative odor impacts during OWEF construction would be less than significant.

Operation and Maintenance

- **AR-1.** Neither operation of the OWEF nor the Coyote Wells Specific Plan project would conflict with or obstruct implementation of the applicable air quality plan. In addition, contribution of Sunrise Powerlink would be minimal under Criterion AR-1. Therefore, the cumulative impacts would be less than significant.
- **AR-2.** Early operation of the proposed OWEF would occur concurrently with Phase 2 and Phase 3 construction of the Coyote Wells Specific Plan project and the Coyote Wells Specific Plan project and operation of the Sunrise Powerlink. Later OWEF operation would occur concurrently with the completed Coyote Wells Specific Plan project's operation. It was determined that OWEF operations would not cause significant impacts related to air quality standard violations, nor were such impacts determined for the other cumulative projects. Therefore, it is anticipated that cumulative operating emissions of the proposed OWEF, along with the other cumulative projects' emissions, would not violate air quality standards or substantially contribute to existing violations, and so would have less-than-significant impacts.
- **AR-3.** Early operation of the proposed OWEF would occur concurrently with Phase 2 and Phase 3 construction of the Coyote Wells Specific Plan project and the Coyote Wells Specific Plan project was determined to exceed the ICAPCD VOC significance threshold during its Phase 2 and Phase 3 construction according to the Final EIR. No other exceedances of the ICAPCD thresholds, after mitigation, were identified for the cumulative projects during the period of OWEF's proposed operation. Therefore, there would be cumulatively significant and unavoidable impacts for VOC during early OWEF operation, and no other significant impacts related to regional air quality. Additionally, OWEF's contribution to this significant impact would be negligible.

- **AR-4.** As shown in Table 4.2-5, the project's operation emissions are minimal after implementation of Mitigation Measures Air-3 and Air-4. The Coyote Wells Specific Plan project's EIR did identify significant VOC impacts during its Phase 2 and Phase 3 construction; however, it did not identify significant impacts of pollutants that have direct air quality standards or significant air toxics impacts during construction or operation. Therefore, it is assumed that there would be less than significant cumulative impacts to area receptors during OWEF operation.
- **AR-5.** The proposed OWEF, as well as, the Coyote Wells Specific Plan project and Sunrise Powerlink project would have less than significant odor impacts. Therefore, the cumulative odor impacts during OWEF operation would be less than significant.

Decommissioning

- **AR-1.** It is assumed that the decommissioning activities and any cumulative projects will be approved in a manner that would conform to the requirements of applicable air quality plans, if any exist, at the time of project decommissioning. Therefore, less-than-significant impacts are expected.
- **AR-2.** As described above in Section 4.2.3.2., decommissioning of the project would have much lower emission than that of the project construction. Although the local attainment status for the air quality standards at the time of project decommissioning is unknown, it is anticipated that cumulative decommissioning emissions of the proposed OWEF, along with the other cumulative projects' emissions, would not violate air quality standards or substantially contribute to existing violations, and so would have less-than-significant impacts.
- **AR-3.** Neither OWEF's decommissioning emissions nor the other cumulative projects' emissions were determined to have significant air quality impacts related to the ICAPCD CEQA thresholds. The actual emissions from these cumulative projects decades in the future when OWEF would undergo decommissioning is unknown; however, it is expected the operating emissions from the Coyote Wells Specific Plan project will be well mitigated and reduced over time as technology improves and emissions from vehicles and other emission sources related to that project are reduced and that the operating emission of the Sunrise Powerlink project will be negligible. Therefore, it is determined that the cumulative projects' emissions during OWEF decommissioning would not result in cumulatively considerable net increases of nonattainment pollutants and would have less-than-significant impacts to regional air quality.
- **AR-4.** Coyote Wells Specific Plan project, which includes limited new residential development, is proposed within a mile of the proposed OWEF (described in Section 4.2.9). Therefore, it is likely that there would be additional residential receptors located within a mile of the project site at the time of project decommissioning. Any receptors located near to the proposed OWEF site would have increased air pollutant exposures from project decommissioning and the emissions from the other cumulative projects; however, as noted above the level of emissions during decommissioning are expected to be substantially lower than those from project construction. Therefore, the cumulative local air quality impacts to the public, including sensitive residential receptors, are expected to be less-than-significant.

- **AR-5.** The proposed OWEF, as well as, the Coyote Wells Specific Plan project and Sunrise Powerlink project would have less than significant odor impacts. Therefore, the cumulative odor impacts during OWEF decommissioning would be less than significant.

4.2.10 Mitigation Measures

Air-1 The Applicant shall develop a Fugitive Dust Control Plan in compliance with Imperial County Air Pollution Control Regulation VIII to reduce Particulate Matter 10 and Fine Particulate Matter 2.5 emissions during construction. The Fugitive Dust Control Plan shall include:

- Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan;
- Description and location of operation(s); and
- Listing of all fugitive dust emissions sources included in the operation.
- The following dust control measures shall be implemented:
    1. The road leading to the operations and maintenance facility shall be paved as early as practical during construction.
    2. All other onsite unpaved roads shall be effectively stabilized using non-toxic soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation. The proposed soil stabilizer(s) MSDS sheet and application strategy (method, frequency, and quantity) shall be provided to the BLM for approval prior to use.
    3. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles are watered hourly for the duration of construction or covered with temporary coverings.
    4. Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when those activities cause visible dust plumes that are transported beyond the site boundary or that remain visible within 400 feet of any occupied residence, school, or public recreation area.
    5. Track-out shall not extend 25 feet or more from an active operation and track-out shall be removed at the conclusion of each workday.
    6. A wheel-washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the proposed project property.
    7. All hauling materials should be moist while being loaded into dump trucks. All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
    8. Soil loads should be kept below 18 inches or the freeboard of the truck.
    9. Drop heights should be minimized when loaders dump soil into trucks.
    10. Gate seals should be tight on dump trucks.
    11. Traffic speeds on unpaved roads shall be limited to 15 miles per hour.
    12. Other fugitive dust control measures as necessary to comply with Imperial County Air Pollution Control District Rules and Regulations.
    13. Disturbed areas should be minimized.

14. Disturbed areas, after active construction activity has ceased, shall be stabilized using non-toxic soil stabilizers approved for project use and should be revegetated as soon as possible after disturbance.

Air-2 The Applicant shall control emissions from the on-site off-road construction equipment by implementing the following:

- All off-road construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower to 750 horsepower, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless that such engine is not available for a particular item of equipment. In the event a Tier 3 engine is not available for any off-road engine larger than 50 horsepower and smaller than 750 horsepower, that engine shall be equipped with retrofit controls that would provide nitrogen oxides and particulate matter emissions that are equivalent to Tier 3 engine. Off-road equipment with diesel engines larger than 750 horsepower shall meet Tier 2 California Emission Standards, or be registered under and comply with the California Air Resources Board's Statewide Portable Equipment Registration Program.
- All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.
- All equipment engines shall be maintained in good operating condition and in proposed tune per manufacturers' specification.

Air-3 The Applicant shall control fugitive dust from the unpaved roads on the site during operation using the following methods:

- Disturbed areas that have been stabilized after active construction activity has ceased, shall be maintained as stabilized surfaces throughout the project's life.
- Traffic speeds on unpaved roads shall be limited to no more than 15 miles per hour. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s) from the central maintenance complex.

Air-4 The Applicant shall control emissions from the on-site dedicated equipment (i.e. equipment that would remain on site each day) by implementing the following:

- All on-site off-road equipment and on-road vehicles for operation/maintenance shall be new equipment that meets the recent California Air Resources Board engine emission standards or alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, as appropriate.
- All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.
- All equipment engines shall be maintained in good operating condition and in proposed tune per manufacturers' specification.

Mitigation Measures Air-1 and Air-2 would reduce Particulate Matter and Nitrogen Oxides emissions, respectively, during construction to the maximum extent feasible. The Applicant proposed magnesium chloride as their soil binder for the proposed project, but BLM may require other soil binders that are equivalent. Implementation of Mitigation Measure Air-1 is expected to reduce fugitive dust emissions by 50 to 85 percent, or more, depending on the emissions source and the related emission control measure. Specifically, proper use of soil binders can reduce fugitive dust from unpaved road travel, the single largest project source of construction fugitive dust emissions, by 85 percent or more. Implementation of

Mitigation Measure Air-2 could reduce NOx, VOC, and PM emissions from the off-road equipment by as much as 78 percent, 91 percent, and 73 percent, respectively, when compared to old uncontrolled equipment that predates the USEPA Nonroad Diesel Engine Emission Standards for off-road equipment. Specific emission reductions based on comparison with lower Tier levels vary by equipment size range and the specific Tier to Tier level comparison, but range from 28 to 85 percent depending on pollutant (with the exception of PM where there is not additional control between Tier 2 and Tier 3) when compared to the Air-2 required Tier 3 level (SCAQMD 2011). For emissions calculation purposes it was assumed that a 38 percent reduction for VOC and NOx emissions, based on conservative assumption of the current fleet average being equivalent to Tier 2 emissions, would occur through the requirement to use Tier 3 or higher off-road engines.

Mitigation Measures Air-3 and Air-4 would reduce Particulate Matter and Nitrogen Oxides emissions, respectively during operation, and Mitigation Measure Air-4 would also reduce NOx emissions in a reasonable manner for this ozone non-attainment area. Implementation of Mitigation Measure Air-3 is expected to reduce fugitive dust emissions by 85 percent, or more, depending on the emissions source and the related emission control measure. Specifically, paving should reduce fugitive dust emissions by over 95 percent versus controlled unpaved roads, and the proper use of soil binders can reduce fugitive dust from unpaved road travel, the single largest project source of operation fugitive dust emissions, by 85 percent or more. Mitigation Measure Air-4 could reduce NOx, VOC, and PM emissions from the dedicated on-site off-road and on-road equipment by amounts similar to those described above for Mitigation Measure Air-2.

Mitigation Measures Air-1 and Air-3 would have secondary impacts from the equipment and travel trips necessary to implement all of the fugitive dust control measures contained in these two conditions. Exhaust emissions will occur from the truck trips needed for delivery of water, soil binder concentrate, wind fences, and wheel washing equipment. However, fugitive dust control using water or soil binders is required by ICAPCD rules and regulations, so the specific provisions requiring the use of soil binders rather than water, which would reduce the application frequency and overall water consumption by orders of magnitude, will reduce the impacts from water use and water trucking. The equipment exhaust Mitigation Measures Air-2 and Air-4 would not cause any new, or affect any existing, environmental impacts.

4.2.11 Residual Impacts After Mitigation

The proposed project would have temporary and unavoidable adverse NOx and PM10 impacts during construction. However, the project would not cause emission rates that could exceed the applicable General Conformity *de minimis* thresholds (40 CFR 93.153) during construction or operation, so a formal conformity analysis and determination are not required for this project. Unlike construction, project operation would not have any adverse impacts since the operation/maintenance activities required for the proposed project are minimal. For all other criteria pollutants, the impacts would not be substantial during either construction or operation. Mitigation Measures Air-1 and Air-3 would mitigate particulate matter emissions during construction and operation to the maximum extent feasible. Mitigation Measures Air-2 and Air-4 would mitigate DPM and NOx emissions to the extent feasible.

4.3 Climate Change

4.3.1 Methodology for Analysis

This section addresses the impacts of greenhouse gas emissions (GHGs) from the proposed OWEF, as well as the consistency of the Proposed Action with the applicable plans and programs that have been implemented by various federal, state and local agencies with jurisdiction over the OWEF project area. Potential GHG emissions from construction and operation, as well as potential emission reductions from fossil-fuel fired electricity generation displacement, are estimated quantitatively to evaluate the impact on GHG emissions due to the Proposed Action and alternatives. Climate change impacts are long-term, global, and cumulative in nature. So the GHG emissions impacts described in this section analyze the potential for long-term cumulative impacts.

4.3.2 CEQA Significance Criteria

The indicators listed below were used to determine whether the OWEF's GHG emissions would be significant under CEQA. These indicators are based on the significance criteria for air quality listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. Under CEQA, the proposed project would have a significant impact on climate change if it would:

CC-1 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment

CC-2 Conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs

CARB published interim significance thresholds for GHG in 2008. The thresholds consist of the performance standards and a quantitative threshold of 7,000 metric tons of carbon dioxide equivalent emissions per year (MTCO2e/year) from non-transportation related GHG sources, which include combustion-related components/equipment, process losses, purchased electricity, and water usage and wastewater discharge (CARB, 2008). While the Imperial County Air Pollution Control District (ICAPCD) has not adopted quantitative GHG emission significance criteria, the South Coast Air Quality Management District (SCAQMD), has adopted an interim GHG significance threshold of 10,000 MTCO2e/year for industrial projects, with a project's construction emissions added after being amortized over 30 years or the project life (SCAQMD, 2008). Those thresholds are relevant for purposes of this analysis because the SCAQMD CEQA regional emissions significance thresholds for criteria pollutants have been adopted by ICAPCD as part of their guidelines.

4.3.3 Alternative 1: Proposed Action

4.3.3.1 GHG Emissions Impacts

The proposed OWEF would generate direct GHG emissions during construction and operation. Direct GHG emissions during construction would be generated from use of off-road equipment (such as graders, cranes, and excavators) and from on-road construction vehicle trips (such as heavy haul trips for WTGs and other construction materials like water and aggregate and cement for concrete production, as well, as construction employee commuting). As a wind energy project, the proposed project would have no primary direct CO_2 emissions from electricity production during operation, but direct GHG emissions during operation would result from the use of off-road equipment and on-road vehicles used for inspection and maintenance and minor leakage from SF_6 containing electrical equipment. The proposed project is likely to result in a large reduction in GHG emissions due to the displacement of electricity generated by fossil fuel-fired power plants, offset by a small increase in GHG emissions due to the loss of carbon uptake from the removal of vegetation associated with Project construction.

There is the potential that the water supply source for the Proposed Action may change from what has considered as part of the DEIS/EIR. The water source considered in the DEIS/EIR's emissions calculations is Pine Valley which is a 45 mile one-way trip. The other potential water sources are from Brawley or Seeley, which have 47 mile and 28 miles one-way trips, respectively. Therefore, if water comes from Brawley the CO_2 emissions will increase marginally from what is presented in the emissions tables, and if water comes from Seeley then the CO_2 emissions will decrease marginally from what is shown in the emissions tables. Appendix G includes a comparison of the water trucking CO_2 emissions for these three potential water sources for all three OWEF alternatives.

Construction

The estimated direct construction GHG emissions for the proposed project, including the secondary direct emissions from offsite construction trips, are presented in Table 4.3-1. Detailed assumptions are included in Appendix G.

Table 4.3-1. Total Construction Period CO_2 Emissions [a]

	MTCO2e [b]
On-road Vehicle Emissions [c]	12,192
Off-road Construction Equipment Emissions	2,682
Total	14,874.1

Source: Staff Analysis, Appendix G

[a] The total emissions are for the entire 11 month construction period and include all revisions to the construction schedule and equipment assumptions that have been provided by the applicant.

[b] For these emission sources the CO_2 emissions, which were calculated, are essentially the same as the CO2e emissions.

[c] On-road emissions include the entire on-road vehicle trip emissions inside and outside of Imperial County.

The total construction GHG emissions when amortized over the 30-year project life would be 495.8 MTCO2e/year.

Operation and Maintenance

The estimated direct operation GHG emissions related to the proposed project, including the emissions from employee and delivery traffic trips, other maintenance and operation activities, the emergency generator, and leakage from SF_6-containing electrical equipment, are presented in Table 4.3-2. Also presented in this table is the project life amortized construction GHG emissions and an estimate of the GHG emissions displaced from the project's electricity generation.

Table 4.3-2. Annual Operation Emissions

	MTCO2e/Year [a]
On-road Vehicle Emissions [b]	526.7
Off-road Maintenance Equipment Emissions	61.2
Emergency Generator Engine	3.6
SF_6-Containing Equipment Leakage	56.4
Total Operation Emissions	**647.8**
Amortized Construction Emissions	**495.8**
Total Annualized Direct Emissions	**1,143.6**
Displaced Annual GHG Emissions	**(289,755)**
Net Project Annual GHG Emissions	**(288,611)**

Source: Staff Analysis, Appendix G

[a] For these emission sources the CO_2 emissions, which were calculated, are essentially the same as the CO2e emissions.

[b] On-road emissions include the entire on-road vehicle trip emissions inside and outside of Imperial County.

Assuming a minimum project design hourly generating capacity of 315 MW[1] and an annual capacity factor of 34 percent and a system-wide GHG emission factor of 681 lbs CO_2/MWh for electricity provided by California utilities (EPA, 2011) including SDG&E, the energy produced by the project would currently displace approximately 289,800 $MTCO_2$/year that would otherwise be emitted by fossil fuel-fired power plants. This is more than enough, by orders of magnitude, to offset the project's construction and operation GHG emissions, so the proposed project would have negative net GHG emissions. However, the exact nature and location of such reductions is not known, and they would drop over time as SDG&E changes its generation profile over time as necessary to comply with State regulations. Regardless, this renewable energy project would provide a net reduction in GHG emissions for the electricity generating sector.

The proposed project would cause the clearing of land and removal of vegetation, which would reduce the ongoing natural carbon uptake by vegetation. A study of the Mojave Desert indicated that the desert may uptake carbon in amounts as high as 100 grams per square meter per year (Stone, 2008). This would equate to a maximum reduction in carbon uptake, calculated as CO_2, of 1.48 MT tons of CO_2 per acre per year for areas with complete vegetation removal. For this proposed project, which would require approximately 155.49 acres of permanently disturbed areas of vegetation removal, the equivalent loss in carbon uptake would be 230 MTCO2e/year, which would correspond to 0.000245 MTCO2e/MWh generated. Therefore, the natural carbon uptake loss would be negligible in comparison to the reduction in fossil fuel CO_2 emissions, which can range from 0.38 ton to 1.1 tons of CO_2 per MWh depending on the fuel and technology of the generation displaced by the proposed project.

Decommissioning

Decommissioning of the proposed project would require removal of the rotors, nacelle, towers, and electrical collection system and transporting all components off site. After removal of equipment and facilities, the site would need to be re-vegetated. Equipment used for decommissioning would generally be similar to that used for construction, but the overall activity necessary during decommissioning would be much less than that of construction. Since decommissioning would occur after at least 30 years of operation, it is likely that equipment engine technology would be more advanced and fuels would be cleaner. Therefore, it is anticipated that GHG emissions generated from decommissioning would be equal to, or more likely less than, those from construction that are estimated above.

---

[1] The total MW production of this alternative will be a function of the size of the wind turbine ultimately selected (see Chapter 2). At a minimum, the total production capacity will be 315 MW, but could be as high as 465 MW if 3.0 MW turbines are used. For the purposes of the GHG emissions displacement calculations the minimum generation size of 315 MW is used for all Project alternatives.

4.3.3.2 CEQA Significance Determinations

Construction/Operation and Maintenance/Decommissioning

Evaluation of CEQA significance for GHG/Climate Change, which is both a long-term and global impact, is based on the effects of the entire project from construction through decommissioning.

- **CC-1.** The proposed OWEF would emit an annualized average of 1,144 MTCO2e/year as presented in Table 4.3-2 above. These direct GHG emissions are well below the interim draft CARB significance threshold of 7,000 MTCO2e/year for industrial projects, not including the emission reductions from the electrical sector that will be enabled by the project's operation. The project as a whole will enable GHG emission reductions within the electricity generation sector; therefore, the impacts of the proposed project would not only be less than significant but also beneficial.
- **CC-2.** As a wind power project, the project would fulfill a portion of the renewable portfolio that is mandated for California and reflected in the CARB AB32 Scoping Plan and the recently approved SB X1-2, partially satisfying the goals of the California Renewable Energy Programs (as described above in Climate Change Policies and Regulations). Additionally, the emission reductions enabled by this project would help reach the AB32 emission reduction goals for the electricity generation sector. Therefore, the project would conform to applicable plans, policies, and regulations related to GHG emission reductions and would have less-than-significant impacts.

4.3.4 Alternative 2: 137 Wind Turbine Generators

4.3.4.1 GHG Emissions Impacts

Construction activities associated with Alternative 2 would be slightly less than the Proposed Action due to the reduced number of wind turbine generators to be installed. The applicant has indicated that the construction duration would be the same for all project alternatives, but the average daily activity would be reduced since there are fewer WTGs to be constructed over the 11-month construction schedule.. Operation/maintenance activities required would be similar to the proposed project, but would also be reduced somewhat due to the reduction in the number of WTGs and related infrastructure.

Construction

Total construction GHG emissions for Alternative 2 would be less than Alternative 1 due to the reduced number of wind turbine generators. Construction elements for O&M Complex and Substation would remain the same as those for the Proposed Action.

Table 4.3-3 summarizes total construction GHG emissions. Detailed assumptions are included in Appendix G.

Table 4.3-3. Total Construction Period CO_2 Emissions [a]

	MTCO2e [b]
On-road Vehicle Emissions [c]	10,754
Off-road Construction Equipment Emissions	2,340
Total	**13,094**

Source: Staff Analysis, Appendix G

[a] The total emissions are for the entire 11 month construction period.

[b] For these emission sources the CO2 emissions, which were calculated, are essentially the same as the CO2e emissions.

[c] On-road emissions include the entire on-road vehicle trip emissions inside and outside of Imperial County.

The total construction GHG emissions when amortized over the 30-year project life would be 436.5 MTCO2e/year.

Operation and Maintenance

Operation of Alternative 2 would result in slightly lower annual greenhouse gas emissions compared to the Proposed Action. It is likely that Alternative 2 would require the same level of maintenance for most of operation/maintenance elements, but it would require slightly less operating hours of equipment used for wind turbine generator and access road maintenance. Emission reductions could be less than that under the Proposed Action, since the capacity and associated generation of Alternative 2 would likely be less than the Proposed Action.

Table 4.3-4 summarizes annual operation GHG emissions. Detailed assumptions are included in Appendix G.

Table 4.3-4. Annual Operation Emissions

	MTCO2e/Year [a]
On-road Vehicle Emissions [b]	524.5
Off-road Maintenance Equipment Emissions	54.1
Emergency Generator Engine	3.6
SF_6-Containing Equipment Leakage [c]	56.4
Total Operation Emissions	**638.5**
Amortized Construction Emissions	**436.5**
Total Annualized Direct Emissions	**1,075.0**
Displaced Annual GHG Emissions	**(289,755)**
Net Project Annual GHG Emissions	**(288,680)**

Source: Staff Analysis, Appendix G

[a] For these emission sources the CO2 emissions, which were calculated, are essentially the same as the CO2e emissions.

[b] On-road emissions include the entire on-road vehicle trip emissions inside and outside of Imperial County.

[c] In lieu of available information, the same number and size of circuit breakers that are assumed in the Proposed Action are assumed for Alternative 2.

Decommissioning

Decommissioning of Alternative 2 would require the same types of activities and equipment as described for construction above. Because decommissioning would occur 30 years in the future, it is likely that equipment engine technology would be more advanced and fuel would be better, and therefore emissions are likely to be less than those estimated above.

4.3.4.2 CEQA Significance Determinations

While the GHG beneficial effects are reduced, the CEQA significance determinations for Alternative 2 would be identical to that for Alternative 1 Action as described in Section 4.3.3.2 above.

4.3.5 Alternative 3: 105 Wind Turbine Generators

4.3.5.1 GHG Emissions Impacts

Construction activities associated with Alternative 3 would be less than the Proposed Action due to the reduced number of wind turbine generators to be installed. The applicant has indicated that the construction duration would be the same for all project alternatives, but the average daily activity would be reduced since there are fewer WTGs to be constructed over the 11-month construction schedule. Operation and maintenance activities required would be similar to the proposed project, but would also be reduced somewhat due to the reduction in the number of WTGs and related infrastructure.

Construction

Total construction GHG emissions for Alternative 3 would be less than the Proposed Action due to the reduced number of wind turbine generators. Construction elements for O&M Complex and Substation would remain the same as those for the Proposed Action.

Table 4.3-5 summarizes total construction GHG emissions. Detailed assumptions are included in Appendix G.

Table 4.3-5. Total Construction Period CO_2 Emissions [a]

	MTCO2e [b]
On-road Vehicle Emissions [c]	8,551
Off-road Construction Equipment Emissions	1,742
Total	**10,294**

Source: Staff Analysis, Appendix G

[a] The total emissions are for the entire 11 month construction period.

[b] For these emission sources the CO_2 emissions, which were calculated, are essentially the same as the CO2e emissions.

[c] On-road emissions include the entire on-road vehicle trip emissions inside and outside of Imperial County.

The total construction GHG emissions when amortized over the 30-year project life would be 343.1 MTCO2e/year.

Operation and Maintenance

Annual operation GHG emissions of Alternative 3 would be less than those of the Proposed Action. It is likely that Alternative 3 would require the same level of maintenance for most of the operation and maintenance elements, but it would require less operating hours of equipment used for wind turbine generator and access road maintenance. Emission reductions could be less than that under the Proposed Action, since the capacity and associated generation of Alternative 3 would likely be less than the Proposed Action.

Table 4.3-6 summarizes annual operation GHG emissions. Detailed assumptions are included in Appendix G.

Table 4.3-6. Annual Operation Emissions

	MTCO2e/Year [a]
On-road Vehicle Emissions [b]	520.7
Off-road Maintenance Equipment Emissions	41.5
Emergency Generator Engine	3.6
SF_6-Containing Equipment Leakage [c]	56.4
Total Operation Emissions	622.1
Amortized Construction Emissions	343.1
Total Annualized Direct Emissions	965.2
Displaced Annual GHG Emissions	(289,755)
Net Project Annual GHG Emissions	(288,790)

Source: Staff Analysis, Appendix G

[a] For these emission sources the CO_2 emissions, which were calculated, are essentially the same as the CO2e emissions.

[b] On-road emissions include the entire on-road vehicle trip emissions inside and outside of Imperial County.

[c] In lieu of available information, the same number and size of circuit breakers that are assumed in the Proposed Action are assumed for Alternative 3.

Decommissioning

Decommissioning of Alternative 3 would require the same types of activities and equipment as described for construction above. Because decommissioning would occur 30 years in the future, it is likely that equipment engine technology would be different and more efficient, and therefore emissions are likely to be less than those estimated above.

4.3.5.2 CEQA Significance Determinations

While the GHG beneficial effects are reduced, the CEQA significance determinations for Alternative 3 would be identical to that for the Proposed Action as described in Section 4.3.3.2 above.

4.3.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.3.6.1 GHG Emissions Impacts

Under this alternative, the proposed project would not be approved and BLM would not amend the CDCA Plan. As a result, no wind energy project would be constructed on the project site and BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

The results of this alternative would be the following:

- The impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other potential uses that are consistent with BLM's land use plan, including another renewable energy project.
- The benefits of the proposed project in displacing fossil fuel-fired generation and reducing associated GHG emissions from gas-fired generation would not occur. Both State and Federal law support the increased use of renewable power generation.

4.3.6.2 CEQA Significance Determinations

Under this Alternative, the activities at the site are not expected to change noticeably from existing conditions. As such, this No Action Alternative would not result in direct GHG emission impacts generated by the Proposed Action nor would it result in the GHG emission benefits associated with the implementation of the Proposed Action. In the absence of the OWEF, other renewable energy projects may be constructed to meet State mandates, and those projects could result in impacts at other locations.

4.3.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.3.7.1 GHG Emissions Impacts

Under this alternative, the proposed Project would not be approved and the BLM would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the project site and BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would continue to remain in its existing condition, with no new structures or facilities constructed or operated on the site.

4.3.7.2 CEQA Significance Determinations

Under this Alternative, the activities at the site are not expected to change noticeably from existing conditions. As such, this No Project Alternative would not result in direct GHG emission impacts generated by the Proposed Action nor would it result in the GHG emission benefits associated with the implementation of the Proposed Action.

4.3.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.3.8.1 GHG Emissions Impacts

Under this Alternative, the proposed project would not be approved and BLM would amend the CDCA Plan to allow for other wind energy projects on the site. As a result, it is possible that another wind energy project could be constructed on the project site.

Because the CDCA Plan would be amended, it is possible that the site would be developed with the same or a different wind energy technology. The GHG emissions and impacts associated with the construction and operation of such a project would likely be similar to the GHG impacts from the Proposed Action.

4.3.8.2 CEQA Significance Determinations

This Alternative could result in future GHG impacts and benefits similar to those of the Proposed Action.

4.3.9 Cumulative Impacts

It is generally agreed within the scientific community that increases in global GHG emission concentration can cause changes to current global climate conditions, which could include changes to the local climate at the project site. The specific nature of any localized climate change cannot be reasonably predicted but it could result in increases or decreases in temperature and rainfall, increases in severe weather events, or otherwise cause changes to the local climatology that could be disruptive to the existing flora and fauna, could increase surface soil loss, and/or could decrease agricultural productivity.

This entire GHG impact assessment presents a cumulative impact assessment; there are no direct localized impacts from project-level GHG emissions. The proposed OWEF alone, or any of the project alternatives, would not be sufficient to effect global climate change. However, because the OWEF would emit GHGs it has been analyzed as a source of potential cumulative impacts in the context of long term global impacts and existing GHG regulatory requirements and energy policies. As noted above, the construction and operation of the project along with the integration of renewable energy generation projects into the grid could result in a sizable reduction in current GHG emission rates given that those projects could offset energy production from conventional sources. This offset could have long-term beneficial impacts with respect to climate change.

4.3.9.1 CEQA Significance Determinations

The proposed project's net GHG impacts would be beneficial. As a result, the project would have no unavoidable adverse impacts related to climate change and the proposed projects incremental contribution to cumulative impacts to Climate Change would not be significant.

4.3.10 Mitigation Measures

The proposed project would result in net GHG emission reductions. And, therefore, would have beneficial impact from a climate change perspective, so no climate change/GHG emissions mitigation measures are recommended.

4.3.11 Residual Impacts After Mitigation

No climate change/GHG emissions mitigation is recommended as the project's net GHG impacts would be beneficial. As a result, the project would have no unavoidable adverse impacts related to climate change.

4.4 Cultural Resources

4.4.1 Methodology for Analysis

This section describes effects on cultural resources that would be caused by implementation of the proposed OWEF and alternatives. The following discussion addresses potential environmental impacts associated with implementation of the Proposed Action and recommends measures to reduce or avoid adverse impacts anticipated from construction, operation, and decommissioning of the proposed OWEF and alternatives. A discussion of cumulative impacts related to cultural resources is also included in this section.

The purpose of this section is to provide evidence of the ongoing public process by which the BLM and Imperial County are jointly complying with Federal, State, and local regulations to which each agency is variously subject. Imperial County is the lead agency for the purpose of complying with CEQA. The BLM is the lead agency for the purpose of complying with NEPA and has further obligations to comply with Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470(f)) (NHPA), and other Federal historic preservation programs.

The structure of the cultural resources analysis for the proposed action accommodates both the primary need of Imperial County to demonstrate, under CEQA, a consideration of the potential for the project to affect cultural resources and the primary needs of the BLM to conduct similar analyses under NEPA and Section 106. (Each of these three regulatory programs uses slightly different terminology to refer to the Proposed Action. Clarifications on the use of “proposed action,” “proposed project,” and “undertaking” may be found in Chapter 7, Glossary.) The present analysis is intended to fulfill the largely parallel goals of the three regulatory programs through the execution of five basic analytic phases. The initial phase is the determination of the appropriate geographic extent of the analysis for the proposed action and for each alternative action under consideration. The second phase is to produce an inventory of the cultural resources in each such geographic area. The third phase is to determine whether particular cultural resources in an inventory are historically significant, unless resources can be avoided by construction. The fourth phase is to assess the character and the severity of the impacts of the proposed or alternative actions on the historically significant cultural resources that cannot be avoided in each respective inventory. And the final phase is to propose measures that would resolve significant impacts. The details of each of these phases follow below and provide the parameters of the present analysis.

4.4.2 Cultural Resources Analysis under CEQA, NEPA, and the NHPA

A key part of a cultural resources analysis under CEQA, NEPA, and Section 106 is to determine which of those cultural resources that a proposed or alternative action may affect are important or historically significant (each of these three regulatory programs uses slightly different terminology to refer to historically significant cultural resources; clarifications on the use of the terms “historical resource,” “important historic and cultural aspects of our national heritage,” and “historic property” may be found in the Chapter 7, Glossary). Subsequent impacts assessments are only made for those cultural resources that are determined to be historically significant. Cultural resources that can be avoided by construction or protected from other effects may remain unevaluated under certain circumstances. Unevaluated cultural resources that cannot be avoided are treated as eligible when determining impacts. The criteria for evaluation and the requisite thresholds of resource integrity that are, taken together, the measures of historical significance, vary among the regulatory programs.

As indicated above, different terminology is used by CEQA, NEPA, and NHPA to refer to important cultural resources. This section primarily uses the term "historic property" when referring to historically significant cultural resources, but the use of other terms such as "historical resource" is intended to have similar meaning.

Evaluation of Historical Significance under CEQA

CEQA requires Imperial County, as a lead agency, to evaluate the historical significance of cultural resources by determining whether or not they meet several sets of specified criteria. Under CEQA, the definition of a historically significant cultural resource is that it is eligible for listing in the CRHR, and such a cultural resource is referred to as a "historical resource," which is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR", or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (Cal. Code Regs., tit. 14, § 15064.5(a)). The term, "historical resource," therefore, indicates a cultural resource that is historically significant and/or eligible for listing in the CRHR. A resource may also be considered a unique archaeological resource under CEQA.

CEQA Significance Criteria

Under CEQA, the proposed project would have a significant impact on cultural resources if it would:

CR-1 *Cause a substantial adverse change in the significance of a historic resource;*

CR-2 *Cause a substantial adverse change in the significance of an archaeological resource; or*

CR-3 *Disturb any human remains, including those interred outside of formal cemeteries.*

Under all of these criteria, adverse changes and impacts include the following:

- Physical, visual, or audible disturbance resulting from construction, operation, and development that would affect the integrity of a resource or the qualities that make it eligible for the CRHR or NRHP;
- Exposure of cultural resources to vandalism or unauthorized collecting;
- A substantial increase in the potential for erosion or other natural processes that could affect cultural resources;
- Neglect of a cultural resource that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe; or
- Transfer, lease, or sale of a cultural resource out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the resource's historic significance.

Evaluation of Historical Significance under NEPA

NEPA establishes national policy for the protection and enhancement of the environment. Part of the function of the Federal Government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." Cultural resources need not be determined eligible for the NRHP as stated in the NHPA to receive consideration under NEPA. NEPA is implemented by regulations of the Council on Environmental Quality, 40 CFR 1500-1508. NEPA provides for public participation in the consideration of cultural resources issues, among others, during agency decision-making.

Evaluation of Historical Significance under Section 106 (Eligibility of Cultural Resources for Inclusion in the NRHP)

Section 106 of NHPA (16 USC 470f) requires federal agencies to consider, in consultation with SHPO, Indian tribes, local governments, and other interested parties, the impacts of their undertakings on historic properties, which includes any historic district, site, building, structure, object, or properties of traditional religious and cultural importance to Native American that are included in or eligible for inclusion in the NRHP. Section 106 also affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (36 CFR Part 800.1). Under Section 106, federal agencies are required to assess the effects of an undertaking on historic properties to determine if they are adverse, and if so to propose and try to reach consensus on mitigation measures to avoid, reduce or resolve such impacts. Historic properties are those resources that are listed in or are eligible for listing in the NRHP per the criteria listed at 36 CFR 60.4 (Advisory Council on Historic Preservation, 2000) and are presented in the next subsection below.

The NHPA established the ACHP and State Historic Preservation Officers (SHPO) to assist federal and State officials regarding matters related to historic preservation. As previously mentioned above, the administering agency, the ACHP, has authored regulations implementing Section 106 that are located in 36 CFR Part 800, Protection of Historic Properties (recently revised, effective January 11, 2001). 36 CFR Part 800 provides detailed procedures, called the Section 106 process, by which the assessment of impacts on archaeological and historical resources, as required by the Act, is implemented.

Given that the proposed project is located on lands managed by BLM and requires authorization by the BLM, the proposed action is considered an undertaking, and therefore must comply with the NHPA and implementing regulations. NEPA addresses compliance with the NHPA, and the required environmental documentation, whether it is an Environmental Assessment (EA) or an EIS, must discuss cultural resources. It is important to recognize, however, that project compliance with NEPA does not mean the project is in compliance with the NHPA.

Under the NHPA (36 CFR Part 800), three steps are required to demonstrate compliance with Section 106: (1) identification of historic properties that may be affected by an undertaking; (2) assessment of project effects on those resources; and (3) development and implementation of mitigation measures to resolve any adverse effects. All three steps require consultation with SHPO, interested Native American tribes, local governments, and other interested parties.

Identification and National Register of Historic Places Evaluation

36 CFR Part 800.3 discusses the consultation process. Section 800.4 sets out the steps the agency must follow to identify historic properties. 36 CFR Part 800.4(c)(1) outlines the process for NRHP eligibility determinations.

The Historic Sites, Buildings and Antiquities Act of 1935 required the survey, documentation, and maintenance of historic and archaeological sites in an effort to determine which resources commemorate and illustrate the history and prehistory of the United States. The NHPA expanded on this legislation and assigned the responsibility for carrying out this policy to the United States Department of the Interior, National Park Service (NPS). Per NPS regulations, 36 CFR Part 60.4, and guidance published by the NPS, National Register Bulletin, Number 15, How to Apply the National Register Criteria for Evaluation, different types of values embodied in districts, sites, buildings, structures, and objects are recognized. These values fall into the following categories:

1. **Associate Value (Criteria A and B):** Properties significant for their association with or linkage to events (Criterion A) or persons (Criterion B) important in the past.

2. **Design or Construction Value (Criterion C):** Properties significant as representatives of the man-made expression of culture or technology.

3. **Information Value (Criterion D):** Properties significant for their ability to yield important information about prehistory or history.

The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association. Cultural resources that are determined eligible for listing in the NRHP, along with SHPO concurrence, are termed "historic properties" under Section 106, and are afforded the same protection as sites listed in the NRHP. Sites that have not been evaluated for eligibility to the NRHP are assumed eligible for project purposes, until a formal evaluation can be completed.

The Project Area of Potential Effect

A useful precursor to a cultural resources analysis under CEQA and NEPA and a requisite part of the Section 106 process (36 CFR Part 800) is to define the appropriate geographic limits for an analysis. For the purpose of the present discussion and analysis, the project area of analysis for direct and indirect effects under NEPA and CEQA is equivalent to the Area of Potential Effects (APE)as described in Chapter 3.4 of this EIS/EIR.

Inventory of Cultural Resources in Project Area of Analysis

A cultural resources inventory specific to each proposed or alternative action under consideration is a necessary step in the effort to determine whether each such action may cause, under CEQA, a substantial adverse change in the significance of historical or unique archaeological resources; may, under NEPA, affect important historic and cultural aspects of our national heritage; or may, under Section 106, adversely affect any cultural resources that are listed in or would qualify for listing in the NRHP.

The development of a cultural resources inventory entails working through a sequence of investigatory phases to establish the universe of cultural resources that will be the focus of the analyses of each proposed or alternative action. Generally, the research process proceeds from the known to the unknown. These phases typically involve doing background research to identify known cultural resources, conducting fieldwork to collect requisite primary data on not-yet-identified cultural resources in the vicinity of an action, and assessing the results of any geotechnical studies or environmental assessments completed for a project site. The results of this research then support the development of determinations of significance for the cultural resources that are found. The cultural resources studies conducted for this project are detailed in Chapter 3.4 of this EIR/EIS.

Assessing Action Impacts

The core of a cultural resources analysis under CEQA, NEPA, or Section 106 is to assess the character of the impacts that a proposed or alternative action may have on cultural resources. The analysis takes into account three primary types of potential impacts which each of the three above regulatory programs defines and handles in slightly different ways. The three types of potential impacts include direct, indirect, and cumulative impacts. Once the character of each potential effect of a proposed or alternative action has been assessed, CEQA requires of further assessment of whether such impact is significant (see CEQA Significance Criteria, above).

Direct and Indirect Impacts

Direct and indirect impacts are those that are more clearly and immediately attributable to the implementation of proposed or alternative actions. Direct and indirect impacts are conceptually similar under CEQA and NEPA. The uses of the concepts vary under Section 106 relative to their uses under CEQA and NEPA as discussed below.

Direct and Indirect Impacts under CEQA and NEPA

As defined in the NEPA Regulations at 40 CFR 1508.8, impacts under NEPA include:

(a) Direct effects, which are caused by the action and occur at the same time and place.

(b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

The definitions of effects under CEQA are virtually identical to those under NEPA, and are provided in §15358 of the *CEQA Guidelines.*

Impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have impacts on historic built-environment resources when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can have impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and when the new structures produce a harmful effect to the materials or structural integrity of the historic structures, such as emissions or vibrations. Placing the proposed plant into this particular setting could have an impact on the integrity of association, setting, and feeling of nearby standing historic structures or other cultural resources.

Other impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer impacts when project construction creates potentially damaging noise and vibration, improved accessibility and vandalism, or greater weather exposure.

Ground disturbance accompanying construction at a proposed plant site, along proposed linear facilities, and at a proposed laydown area has the potential to impact subsurface archaeological resources that are unidentified at this time. The potential physical impacts of the proposed construction on unknown archaeological resources are commensurate with the extent of ground disturbance entailed in the particular mode of construction. This varies with each component of the proposed project.

Direct and Indirect Impacts under Section 106

Both direct and indirect impacts may be considered adverse effects under Section 106. The regulatory definition of "adverse effect," pursuant to 36 CFR § 800.3(1)(a), is "when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association...Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative."

Cumulative Impacts

Cumulative Impacts are slightly different concepts under CEQA and NEPA, and are, under Section 106, undifferentiated as an aspect of the potential impacts of an undertaking, or a proposed or alternative action.

Cumulative Impacts under CEQA

A cumulative impact under CEQA refers to a proposed project's incremental impacts considered over time and taken together with those of other, nearby, past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code sec. 21083; Cal. Code Regs., tit. 14, secs. 15064(h), 15065(a)(3), 15130, and 15355). Cumulative impacts to cultural resources in the project vicinity could occur if any other existing or proposed projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, considered together, would be significant. The previous ground disturbance from prior projects and the ground disturbance related to the future construction of a proposed project and other proposed projects in the vicinity could have a cumulatively considerable effect on archaeological deposits, both prehistoric and historic. The alteration of the natural or cultural setting which could be caused by the construction and operation of a proposed project and other proposed projects in the vicinity could be cumulatively considerable, but may or may not be a significant impact to cultural resources.

Cumulative Impacts under NEPA

Cumulative actions are those that when viewed with the proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement (40 CFR 1508,25(a)(2)). According to the Council on Environmental Quality (CEQ) regulations as "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). As such, an individual action when considered alone may not have a significant effect, but when its effects are considered in sum with the effects of other past, present, and reasonably foreseeable future actions, the effects may be significant.

Cumulative Impacts under Section 106

The Section 106 regulation makes explicit reference to cumulative impacts only in the context of a discussion of the criteria of adverse effect (36 CFR § 800.5(a)(1)). Cumulative impacts are largely undifferentiated as an aspect of the potential impacts of an undertaking. Such impacts are enumerated and resolved in conjunction with the consideration of direct and indirect impacts.

Assessing the Level of Severity of Action Impacts

Once the character of the impacts that proposed or alternative actions may have on historically significant cultural resources has been determined, the severity of those impacts needs to be assessed. CEQA, NEPA, and Section 106 each have different definitions and tests that factor into decisions about how severe or how significant the impacts of particular actions may be.

While NEPA must assess effects to NRHP-eligible cultural resources (identified through the Section 106 process), it must also consider effects to other cultural resources that may not be subject to NRHP evaluation. Assessing effects to NRHP-eligible resources and cultural resources is typically accomplished through the consultation process and the impacts identified through the consultation process are discussed in this EIS/EIR.

Significant Impacts under CEQA

Under CEQA, "a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment" (Pub. Resources Code, § 21084.1). Thus, staff analyzes whether a proposed project would cause a substantial adverse change in the significance of the subset of the historical resources in the cultural resources inventory for a project area that the proposed project demonstrably has the potential to effect. The degree of significance of an impact depends on:

- The cultural resource impacted;
- The nature of the resource's historical significance;
- How the resource's historical significance is manifested physically and perceptually;
- Appraisals of those aspects of the resource's integrity that figure importantly in the manifestation of the resource's historical significance; and how much the impact will change those integrity appraisals.

As stated in Section 3.4.2, the County has determined that the project site, consisting of the APE, is not a historic resource for purposes of the CEQA analysis of impacts. The County further has determined that the project site is not an archaeological resource for purpose of the CEQA analysis of impacts.

Therefore, based upon such determinations, the current draft MOA has not been included by the County in its mitigation measures.

Adverse Effects under Section 106

In accordance with 36 CFR Part 800.5 of the ACHP's implementing regulations, which describes criteria for adverse effects, impacts on historic properties are considered significant if one or more of the following conditions would result from implementation of the proposed action:

An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the NRHP. For the purpose of determining the type of effect, alteration to features of a property's location, setting, or use may be relevant, depending on the property's significant characteristics, and should be considered.

An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

1. Physical destruction, damage, or alteration of all or part of the property
2. Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NRHP
3. Introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting
4. Neglect of the property, resulting in its deterioration or destruction
5. Transfer, lease, or sale of the property

Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Resolving Significant/Adverse Impacts

The final phase of a cultural resources analysis is the resolution of those impacts of a proposed or alternative action that have been found to be significant or adverse. The terminology used to describe the process of impacts resolution differs among the three regulatory programs. The resolution of significant impacts under CEQA involves the development and implementation of "mitigation measures," which would minimize any such impacts (14 CCR § 15126.4). Mitigation under NEPA includes proposals that avoid or minimize any potential adverse impacts on the quality of the human environment from a proposed or alternative action (40 CFR § 1502.14(f); 1502.16(h)). The definition of mitigation in the NEPA regulation includes the development of measures that would avoid, minimize, or rectify significant effects, progressively reduce or eliminate such impacts over time, or provide compensation for such impacts (40 CFR § 1508.20). The Section 106 process directs the "resolution of adverse effects" through the development of proposals to avoid, minimize, or otherwise mitigate such effects (36 CFR § 800.6(a)).

4.4.3 Alternative 1: Proposed Action

4.4.3.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for the Proposed Action is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Construction of Alternative 1 would require clearing and grading of the temporary and permanent disturbance areas and could result in impacts to previously recorded and unanticipated cultural resources including adverse changes in the setting of resources and damage and/or displacement of resources resulting in the loss of information about history and prehistory. NRHP eligibility recommendations and/or assumptions have been made for identified ethnographic, archaeological, and built environment resources (Tierra, 2012; Moomjian, 2012). The NRHP eligibility recommendations are presented in Table 3.4-1 in Section 3.4.1.4.

A total of 287 archaeological sites have been documented within the APE. Of these 287 sites, 229 are prehistoric sites, 29 are historic-era sites, and 29 are multi-component sites (sites containing both prehistoric and historic-era components). All of these sites are being treated as eligible by the agency for project management purposes however contractor eligibility recommendations have been provided below for each in Table 4.4-1. As explained in Sections 3.4.1.3, 5.2.2, and 5.2.3, through government–to-government and Section 106 consultation, various Indian tribes have identified a traditional cultural property (TCP) in the area of the project. Those tribes have provided some information about the characteristics of some portions, but not all, of the TCP that make it eligible for the NRHP (see Section 3.4.1.2). As stated in Section 3.4.1.2, the BLM has carefully reviewed this information and will conservatively assume the portion of the TCP within the project footprint and some of the resources identified in Table 4.4-1 (see below) are contributors to the TCP.

Three built environment resources (Desert View Tower [P-13-008044], Old Highway 80 [P-13-008418], and the San Diego Eastern & Arizona Railroad, Desert Line [P-13-00-9302]), are listed on or have already been determined eligible for listing in the NRHP and/or CRHR and are considered significant historical resources.

Table 4.4-1. Archaeological Resources Eligibility and Management Summary

Resource Designation	Site Type	Recommended Eligibility	Within 150' of Project Component	Construction Management Strategy
CA-IMP-008/H	Camp Site, Agave Processing Area, Rock Features & Historic Refuse Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-055	Artifact Scatter & Rock Feature	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-103/H	Artifact Scatter, Historic Mining Site & Refuse Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-443	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-1427	Lithic Scatter & Rock Feature	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-1431/H	Artifact Scatter, Rock Features & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary

Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
CA-IMP-2430	Camp Site	Eligible (Criterion D)	No	Avoid
CA-IMP-2471/H	Camp, Cremation, Trail & Historic Refuse Scatter	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-2488	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-3705/H	Artifact Scatter & Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-3712	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-3720H	Historic Mining Site	Not Eligible	No	Avoid
CA-IMP-6508/H	Artifact Scatter, Rock Features & Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-6915	Camp Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-6919	Artifact Scatter	Eligible (Criterion D)	No	Avoid
CA-IMP-6920	Lithic Scatter &Trail/ Geoglyph	Eligible (Criteria C & D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-6921/H	Lithic Scatter, Rock Features, Historic Foundations & Refuse Scatter	Not Eligible	No	Avoid
CA-IMP-6922	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-6923/H	Lithic Scatter, Historic Refuse & Road	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-6924	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-6988	Artifact Scatter, Agave Processing Area & Geoglyph	Listed (Criteria C & D); Eligible contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
CA-IMP-10885/H	Artifact Scatter & Mining Site	Not Eligible	No	Avoid
OCO-003	Camp Site, Rock Feature & Modern Geoglyph	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-008	Lithic Scatter & Rock Feature	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-011	Lithic Scatter & Agave Processing Area	Not Eligible	No	Avoid
OCO-012	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-014	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-019	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-021	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-023	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-024	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-025	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-026	Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-AMC-001/H	Lithic Scatter, Rock Feature & Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-003	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary

Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-AMC-004	Ceramic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-005H	Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-006	Ceramic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-010H	Historic Refuse Scatter	Not Eligible	No	Avoid
OCO-AMC-027H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-028	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-032	Lithic Scatter	Not Eligible	No	Avoid
OCO-AMC-035	Lithic Scatter	Not Eligible	No	Avoid
OCO-AMC-042	Lithic Scatter& Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-044/H	Artifact Scatter, Agave Processing Area & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-052	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-053H	Historic Survey Marker & Rock Feature	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-054	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-064	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-065	Lithic Scatter	Not Eligible	No	Avoid
OCO-AMC-066	Lithic Scatter & Rock Features	Not Eligible	No	Avoid
OCO-AMC-067	Lithic Scatter & Rock Features	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-068/H	Lithic scatter, Rock Features & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-069	Lithic Scatter	Not Eligible	No	Avoid
OCO-AMC-070	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-072	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-076/H	Lithic Scatter, Historic Mining Site & Road	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-078	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-083	Modern Redeposited Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-086	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-088	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-090	Artifact Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-091	Artifact Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-094	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-097	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary				
Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-AMC-100	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-102	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-125	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-126	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-AMC-129	Lithic Scatter	Not Eligible	No	Avoid
OCO-AMC-130	Lithic Scatter	Not Eligible	No	Avoid
OCO-AMC-500T	Trail & Rock Features	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-AMC-501T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-BF-001	Camp Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-004H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-005	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-008	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-009H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-012	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-013/H	Lithic Scatter, Rock Features & Survey Markers	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-017	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-018/H	Lithic Scatter & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-019/H	Lithic Scatter & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-020	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-026/H	Lithic Scatter & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-034	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-035	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-040	Artifact Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-041	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-042T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-044	Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-BF-048	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-BF-049	Agave Processing Area	Eligible (Criterion D)	No	Avoid

Table 4.4-1. Archaeological Resources Eligibility and Management Summary				
Resource Designation	**Site Type**	**Recommended Eligibility**	**Within 150′ of Project Component**	**Construction Management Strategy**
OCO-BF-050	Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-BF-054	Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-BF-055	Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-BF-056	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-057	Ceramic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-059	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-BF-060	Artifact Scatter	Not Eligible	No	Avoid
OCO-BF-061	Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-CWB-001T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-CWB-002T	Trail & Rock Feature	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-CWB-003T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-CWB-004T	Trail & Rock Features	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-EAM-001	Camp Site	Not Eligible	No	Avoid
OCO-EAM-002	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-005	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-010	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-011	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-012	Camp Site, Trail & Rock Features	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-013	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-014	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-015	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-017	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-018H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-019	Camp Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-020	Artifact Scatter	Not Eligible	No	Avoid
OCO-EAM-023	Lithic Scatter & Rock Feature	Not Eligible	No	Avoid
OCO-EAM-024	Lithic Scatter & Rock Feature	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-025	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-026	Lithic Scatter & Rock Feature	Not Eligible	No	Avoid
OCO-EAM-027	Lithic Scatter	Not Eligible	No	Avoid

Table 4.4-1. Archaeological Resources Eligibility and Management Summary

Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-EAM-028	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-030	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-031	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-EAM-032	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-033H	Historic Mining Site	Not Eligible	No	Avoid
OCO-EAM-034	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-035	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-036	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-037	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-038	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-039	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-040	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-042	Camp Site & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-043	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-044	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-046	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-047	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-048H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-049	Agave Processing Area	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-050	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-052	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-053	Lithic Scatter & Rock Feature	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-054	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-055	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-056T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-057	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-058	Camp Site & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-061	Artifact Scatter	Not Eligible	No	Avoid
OCO-EAM-062	Lithic Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-064	Rock Feature	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-065	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary				
Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-EAM-067/H	Lithic Scatter, Rock Features & Historic Mining Site	Not Eligible	No	Avoid
OCO-EAM-068	Agave Processing Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-069	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-070	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-071	Lithic Scatter & Rock Feature	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-072	Lithic Scatter & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-074	Camp Site & Rock Feature	Eligible (Criterion D)	No	Avoid
OCO-EAM-075/H	Artifact Scatter, Rock Features & Historic Refuse Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-076	Lithic Scatter & Rock Feature	Not Eligible	No	Avoid
OCO-EAM-077	Camp Site & Rock Features	Eligible (Criterion D)	No	Avoid
OCO-EAM-078	Lithic Scatter	Not Eligible	No	Avoid
OCO-EAM-079	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-081	Lithic Scatter & Cremation Site	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-EAM-082	Artifact Scatter	Not Eligible	No	Avoid
OCO-EAM-083	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-084	Artifact Scatter & Rock Features	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-085	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-087	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-088	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-089	Agave Processing Area	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-100	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-101	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-102	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-103	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-104	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-106	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-107	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	No	Avoid
OCO-EAM-108	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-109	Lithic Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary				
Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-EAM-110	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-111	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-112	Lithic Scatter & Agave Processing Area	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-113	Lithic Scatter & Geoglyph	Eligible (Criteria C & D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-EAM-114	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-151	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-152	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-200T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-EAM-300H	Historic Mining Site & Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-JLU-173/H	Artifact Scatter & Historic Mining Site	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KAM-001T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-KRM-001	Lithic Scatter & Rock Features	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-003	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-004	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-005	Lithic Scatter	Not Eligible	No	Avoid
OCO-KRM-006	Artifact Scatter & Rock Features	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-007	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-008	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-009	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-020	Ceramic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-022	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-023	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-024	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-025	Artifact Scatter	Not Eligible	No	Avoid
OCO-KRM-026	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-032	Artifact Scatter	Not Eligible	No	Avoid
OCO-KRM-033	Ceramic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary				
Resource Designation	**Site Type**	**Recommended Eligibility**	**Within 150′ of Project Component**	**Construction Management Strategy**
OCO-KRM-037	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-044	Lithic Scatter	Not Eligible	No	Avoid
OCO-KRM-048T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-051	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-052/H	Lithic & Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-053	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-059/H	Artifact Scatter, Rock Features & Survey Markers	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-KRM-065T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-KRM-066T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-KRM-067	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-001	Artifact Scatter	Not Eligible	No	Avoid
OCO-LPM-002	Lithic Scatter	Not Eligible	No	Avoid
OCO-LPM-004	Lithic Scatter & Agave Processing Area	Not Eligible	No	Avoid
OCO-LPM-006	Artifact Scatter & Agave Processing Area	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-007	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-008	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-009	Camp Site & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-010	Camp Site & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-011T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-012	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-LPM-013	Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MD-001T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-MD-002T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-MD-003T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-MHN-001T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid

Table 4.4-1. Archaeological Resources Eligibility and Management Summary

Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-MOW-001H	Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-002	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-004H	Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-005	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-010	Ceramic Scatter	Not Eligible	No	Avoid
OCO-MOW-011	Ceramic Scatter	Not Eligible	No	Avoid
OCO-MOW-012/H	Artifact Scatter& Historic Mining Site & Refuse Scatter	Not Eligible	No	Avoid
OCO-MOW-013/H	Lithic Scatter, Rock Feature, Historic Refuse Scatter & Survey Marker	Not Eligible	No	Avoid
OCO-MOW-014	Artifact Scatter	Not Eligible	No	Avoid
OCO-MOW-016	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-022/H	Artifact Scatter & Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-026H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-027H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-028	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-029H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-032	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-037H	Historic Mining Site & Survey Marker	Not Eligible	No	Avoid
OCO-MOW-038	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-039	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-040H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-042	Artifact Scatter	Not Eligible	No	Avoid
OCO-MOW-043/H	Ceramic & Historic Refuse Scatter	Not Eligible	No	Avoid
OCO-MOW-045H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-046H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-047H	Historic Mining Site & Survey Marker	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-048H	Historic Mining Site & Survey Marker	Not Eligible	No	Avoid
OCO-MOW-049H	Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-050H	Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-051	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-052/H	Ceramic Scatter & Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring

Table 4.4-1. Archaeological Resources Eligibility and Management Summary

Resource Designation	Site Type	Recommended Eligibility	Within 150′ of Project Component	Construction Management Strategy
OCO-MOW-054	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-055	Camp Site & Rock Features	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-059H	Historic Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-064/H	Artifact Scatter & Historic Mining Site & Refuse Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-065H	Historic Mining Site	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-066	Artifact Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-067H	Historic Mining Site & Survey Marker	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-068	Lithic Scatter & Rock Features	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-069	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-070	Lithic Scatter	Not Eligible	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MOW-071	Lithic Scatter	Not Eligible	No	Avoid
OCO-MOW-072	Lithic Scatter	Not Eligible	No	Avoid
OCO-MOW-073H	Historic Mining Site	Not Eligible	No	Avoid
OCO-MOW-074	Lithic Scatter	Not Eligible	No	Avoid
OCO-MOW-200T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-MOW-201T	Trail	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-MTE-006/H	Camp Site & Historic Mining Site	Eligible (Criterion D)	No	Avoid
OCO-SAC-003	Artifact Scatter & Agave Processing Area	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-SAC-100T	Trail & Rock Features	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	No	Avoid
OCO-VAP-023	Artifact Scatter & Cremation Site	Eligible (Criterion D); contributor to the identified TCP (Criterion A)	Yes	Avoid; Temporary Fencing/Monitoring
OCO-VAP-025	Artifact Scatter	Eligible (Criterion D)	Yes	Avoid; Temporary Fencing/Monitoring
P-13-012210	Road (Dos Cabezas)	Not Eligible	Yes	None

Archaeological Resources and the TCP

Design modifications to the OWEF project and the implementation of the proposed mitigation measures are expected to avoid or reduce most impacts to cultural resources within the footprint of the project as it has been designed to avoid physically impacting all of the identified archaeological sites regardless of eligibility. Mitigation Measures CUL-1 (*Identify and evaluate cultural resources in final APE*), CUL-2 (*Avoid and protect potentially significant resources*), and CUL-3 (*Develop and Implement a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects*) have been formulated to ensure that project construction effects on historic and archaeological resources would be mitigated by ensuring identification, evaluation, avoidance, and protection of resources. Construction of the proposed OWEF would occur in full compliance with BLM BMPs (see Section 4.4.10, Mitigation Measures).

Due to various surface conditions or changes over time, not all cultural resources are expressed on the surface. Any project with ground disturbing components has the potential to impact unanticipated cultural resources. The concentration of archaeological sites in the project area suggests that this potential exists in the APE. Construction of Alternative 1 may result in inadvertent discoveries of cultural resources. Implementation of Mitigation Measures CUL-3 (*Develop and Implement a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects*), CUL-6 (*Train construction personnel*), CUL-8 (*Monitor construction in areas of high sensitivity for buried resources*), and CUL-11 (*Control unauthorized access*), would ensure that the worker training program, use of environmental monitoring, and clear demarcation of designated access roads reduce the risk of physical impacts to cultural resources within the project APE.

The road network required for Alternative 1 could lead to increased public access to otherwise remote archaeological sites (raising the potential for unauthorized artifact collection and vandalism), as well as leading to physical damage to the sites through erosion caused by the concentration of site run-off or soil disturbance. However, implementation of Mitigation Measures CUL-10 (*Protect and monitor NRHP-eligible and/or CRHR-eligible properties*) through the development of a long-term monitoring plan, and CUL-11 (*Control unauthorized access*) would minimize these potential impacts.

However, impacts would still occur to the TCP that exists within the APE and surrounding area and the contributing elements to this TCP, such as the Spoke Wheel Geoglyph (CA-IMP-6988). As explained in Section 3.4.1.3, the BLM is assuming for purposes of analysis that the characteristics that make up this TCP, based on the information obtained during consultation, include:

- Viewsheds towards portions of the natural landscape that surrounds the project site, including Coyote, Signal, and Sugarloaf Mountains (all of which are outside the APE). These mountains have been identified as sacred corner markers in several Native American belief systems, corridors between the mountains and the proposed project area were part of a corridor used by native peoples in the past, and that these mountains form a key part of their strong connection to the land and the power received from the land.
- Many of the identified archaeological resources within the APE including the other geoglyphs, trails, cremations and other habitation and rock features sites (see notations in Table 3.4-3).

Together these resources have a connection which allows them to be considered part of the TCP under Section 106. This TCP is assumed eligible under Criterion A, for its local significance and association with events that have made a significant contribution to broad patterns of our history. Tribes have explained that the TCP draws its significance as a location where: the origin stories of several nearby federally recognized Native American Tribes took place; ceremonial activities were and are performed in accordance with traditional cultural rules of practice: and economic, artistic, or other cultural practices important in maintaining their historic identity were and are conducted.

While the proposed project has been designed to avoid physical impacts to the archaeological resources, the construction and operation of wind turbines within the TCP would result in visual and auditory effects that have the potential to impact the use of these locations for religious purposes. Inasmuch as the ritual landscape extends beyond the project ROW and visual and auditory effects cannot be limited to the project boundaries, adverse effects may also occur to additional ritual sites and traditional uses of the landscape as a whole. Tribes have discussed the impact the OWEF would have to their ability to practice traditional ceremonial activities at locations within the APE, including the Spoke Wheel Geoglyph due to the loss of privacy caused by the introduction of additional access roads on the project site and the introduction of visual, auditory, and atmospheric intrusions associated with the placement of project turbines within proximity of features on the project site. As noted above, because specific information about the use of the project site was not provided, the BLM was not able to analyze in detail the impacts the project might have on those ceremonial uses from an access or visual, auditory, and atmospheric intrusion perspective.

Visual impacts from the project to the TCP would include changes to views and setting that has been identified as important to tribes resulting from the introduction of wind turbines and associated infrastructure. Because the wind turbines are visually prominent structures, they would be visible from view points throughout the project area and from many surrounding areas. As a result, views of Coyote, Signal, and Sugarloaf Mountains would be altered by the placement of wind turbines in the project area, including views from the Spoke Wheel Geoglyph and other culturally important archaeological resources. The proposed wind turbines would also change the general character of the project area, changing it from a generally rural and sparsely developed landscape to one that is much more industrialized in nature. As discussed in Section 4.18 (Visual Resources), the proposed OWEF would result in the introduction of visually prominent structures into a landscape generally lacking similar built features of an industrial or technological character. Although the Southwest Powerlink (SWPL) and Sunrise Powerlink (SRPL) transmission lines are visible in the project area, they do not appear as prominent as the proposed wind turbines. In addition, as discussed in Section 4.9 (Noise), construction activities would produce a short-term increase over the existing ambient noise levels. During the operation and maintenance period of the project, noise levels generated by the wind turbines under the worst-case scenario (low temperature and high relative humidity) would be considered acceptable would meet the Imperial County daytime and nighttime noise limits. Nonetheless, the prediction for community reaction would be just above the "high annoyance threshold for wind turbine noise" and could result in local complaints about noise.

Based on the information obtained to date through the Section 106 Consultation process and the assumptions noted above, the BLM has found under Section 106 that the TCP would be adversely affected by the implementation of the proposed project due to the introduction of wind turbines. In particular, the project would alter the character of the property from rural to industrial, through the introduction of visual and auditory intrusions in the form of the wind turbines. Impacts are expected to be especially severe between the Spoke Wheel Geoglyph and Coyote Mountain, as well as in the vicinity of any cremation or other culturally and traditionally significant sites including trails, rock features or habitation sites. The adverse visual effect on the resources' viewshed toward Coyote Mountain would be reduced by the elimination of turbine locations between the Spoke Wheel Geoglyph and Coyote Mountain; however, adverse effects would still remain in particular towards views of the other significant geologic features, including Signal and Sugarloaf Mountains. In addition to these natural features, the BLM has also assumed that the ethnographic and archaeological sites identified in Table 4.5-1 contribute to the identified TCP. With respect to these resources, as explained above, while the OWEF has been designed to avoid direct physical impacts to them and all the others the potential for the OWEF to impact them in other ways is as described above. Moreover, to the extent these particular archaeological and ethnographic resources are considered collectively, impacts due to the industrial character of the OWEF would be the same as those describe to the viewshed more broadly.

As indicated above, tribes have told the BLM that they view the cremation areas as sacred and are concerned that additional unknown cremations may be located within the project area. The Archaeological Survey Report (ASR) concluded that the project area contains three prehistoric human cremations. Although physical impacts to all of the archaeological sites and any cremation areas within them have been avoided in the design of the proposed project, some tribes have stated that they feel there is still an impact to the sacred values they attribute to these cremations. As noted above, all of these cremations are assumed to be characteristics of the identified TCP, the impacts to which are discussed above.

Built Environment Resources

Three built environment resources are listed on or have been determined eligible for listing in the NRHP and/or CRHR and are considered significant historical resources.

The Desert View Tower has been determined to be significant under NRHP Criterion C (Design/Construction) as an example of twentieth century environmental folk art, with a period of significance extending from the 1920s-1950s. Both the Tower and the surrounding rock sculptures comprise the resource and convey its significance. Its significance is not derived from, or by, providing views of the Imperial Valley. The project, which is located along the valley floor at a lower elevation than the Tower, will be visible at the Tower location. However, the project will not introduce any visual elements that will diminish the integrity of the resource's significant historic features. In particular, the project will not cause an adverse visual effect upon the location, design, setting, materials, workmanship, feeling, or association elements of the resource's integrity. Most importantly, the project's visual effect will not adversely affect, or otherwise impair, the environmental folk art quality of the resource. As such, the significance of the resource will not be impaired and the project will not cause an adverse visual impact to this resource.

The second resource, Old Highway 80, has been determined as significant under National Register Criterion A (Event) for its association with early transcontinental highway development, and for its early designation and continued use, providing Imperial Valley's essential east and west vehicular connections, with a period of significance extending from 1926-1972. The project, which is located at a valley floor elevation consistent with that of the resource, will be visible from all points along the highway location. However, the project will not introduce visual elements that will diminish the integrity of the resource's significant historic features, or an adverse visual effect upon the location, design, materials, workmanship, feeling, or association elements of the resource's integrity. In terms of setting, although the project will change the visual appearance of the overall area, the impact to the resource's setting element will be slight due to the fact that the project will be located at a sufficient distance away from the resource (approximately 2,150 feet), such that the physical environment in and around the resource will not be sufficiently impaired. Most importantly, the project's visual effect will not adversely affect, or otherwise impair, the historic event association for which the resource is recognized as significant. The project's visual effect will not adversely affect, or otherwise impair, the early transcontinental highway development association embodied in the resource. As such, the significance of the resource will not be impaired and the project will not cause an adverse visual impact to this resource.

The San Diego Eastern & Arizona Railroad (Desert Line) has been determined as significant under National Register Criterion A (Event) for its important role in the development and economy of sections of Imperial County from the 1920s to the present, and under Criterion C (Design/Construction) for its intact roadbed, track engineering. The project, which is located at a valley floor elevation consistent with that of the resource, will be visible from all points along the railroad location and its extensions, but would not introduce visual elements that will diminish the integrity of the resource's significant historic features. In particular, the project would not cause an adverse visual effect upon the location, design, materials, workmanship, feeling, or association elements of the resource's integrity. In terms of setting, although the project will change the visual appearance of the overall area, the impact to the resource's setting element will be minimal due to the fact that the project will be located at a sufficient distance away from the resource (approximately 600 feet at its closest point), such that the physical environment in and around the resource will not be sufficiently impaired. Most importantly, the project's visual effect will not adversely affect, or otherwise impair, the historic event association or design/construction for which the resource is recognized as significant. The project's visual effect will not adversely affect, or otherwise impair, the important role of the railroad to the development and economy of Imperial County, nor its significance for its intact engineering qualities embodied in the resource. As such, the significance of the resource will not be impaired and the project will not cause an adverse visual impact to this resource.

Although not located within the project area, the Anza National Historic Trail and its associated recreational components such as the BLM road network, campgrounds, and monument, may be adversely affected by the project through the introduction of industrial elements within the viewshed of these resources. The historic corridor of the Anza Trail is located approximately 4 miles to the east of the OWEF, and the Anza National Historic Trail recreational trail is located approximately 3.5 miles from the project area.

Operation and Maintenance

Impacts to the TCP district during operation and maintenance of Alternative 1 are expected to be the same as those for construction, described above. While these adverse impacts may be lessened by the proposed mitigation measures, effects would still remain. Aside from visual impacts to setting, the primary potential for physical impacts to archaeological resources during the operation and maintenance phase of Alternative 1 is from unanticipated damage or inadvertent discoveries. During operation and maintenance, the Applicant's worker training program, use of environmental monitoring, and clear demarcation of designated access roads would also reduce the risk of adverse impacts to cultural resources within the project APE. Avoidance and protection of potentially significant resources during the operation and maintenance phase of the project through implementation of Mitigation Measure CUL-10 (*Protect and monitor NRHP-eligible and/or CRHR-eligible properties*) would protect cultural resources originally avoided by construction impacts. Because operation and maintenance activities would be limited to the approved construction footprint of Alternative 1 (i.e., the OWEF site), no additional physical impacts to cultural resources are expected during operation and maintenance.

In accordance with Mitigation Measures CUL-4 (*Develop an HPTP and conduct data recovery or other actions to resolve adverse effects*) and CUL-9 (*Continue consultation with Native American and other traditional groups*), a Tribal Access Plan would be developed to address ritual sites access and management issues. This Plan would ensure reasonable access to these sites for ceremonial and other traditional uses, and may include provisions for the reduction of impacts during tribal visits and protection of privacy, and a program to ensure the physical stability and integrity of the ritual sites within the project ROW, if necessary.

The road network required for Alternative 1 can lead to increased public access to otherwise remote archaeological sites, as well as leading to physical damage to the sites through erosion caused by the concentration of site run-off or soil disturbance. However, Mitigation Measures CUL-10 (*Protect and monitor NRHP-eligible and/or CRHR-eligible properties*), which requires development of a long-term monitoring plan, CUL-11 (*Control unauthorized access*), and CUL-12 (*Funding of ranger and law enforcement patrols*) would minimize any adverse effects. Alternative 1 would also alter visual conditions in the area by introducing modern, industrial elements, which would alter the context and setting of historic properties in the area. Visual recovery from project-related residual land disturbance would likely occur only over a very long period of time and would require successful restoration as stipulated in Mitigation Measure VR-1 (see Section 4.18). In addition, Mitigation Measure VR-2 has been recommended to reduce impacts associated with night lighting. Although these measures may reduce the severity of impacts to historic viewsheds over the life of the project, adverse impacts would not be avoided.

Decommissioning

Decommissioning of the proposed OWEF would include the removal and disposal of turbine towers, above-ground electrical tower components, and substation components, as well as the removal of all below-ground infrastructure to three feet below the ground surface. A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS and Record of Decision (ROD), and approved by the BLM. Because decommissioning activities are similar in nature to construction activities, the BMPs and mitigation measures developed for construction activities would be applied during the decommissioning phase, including as related to the protection of cultural resources from adverse impacts. With implementation of Mitigation Measures CUL-1 (*Identify and evaluate cultural resources in final APE*), CUL-2 (*Avoid and protect potentially significant resources*), and CUL-3 (*Develop and Implement a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects*), decommissioning effects on any known or unknown historic and archaeological resources would be mitigated by ensuring identification, evaluation, avoidance, and protection of resources.

The primary potential for physical impacts to cultural resources during the decommissioning phase of Alternative 1 is from either unanticipated damage or inadvertent discoveries. The worker training program, use of environmental monitoring, and clear demarcation of designated access roads would reduce the risk of physical impacts to cultural resources within the APE, but outside the smaller construction footprint of the OWEF site. Avoidance and protection of potentially significant resources (Mitigation Measure CUL-2) during the decommissioning phase of the project would protect cultural resources originally avoided by construction impacts. Because decommissioning activities would be limited to the approved construction footprint of Alternative 1 (i.e., the OWEF site), no additional physical impacts to cultural resources are expected.

The decommissioning of the proposed OWEF would either eliminate or substantially reduce other impacts to cultural resources by the removal of modern elements inconsistent with the original nature of the area. If the ground surface is properly restored and stabilized after removal of the project features, risk of impacts to the archaeological sites from erosion will be reduced. Visual recovery from project-related residual land disturbance likely would require successful restoration as stipulated in Mitigation Measure VR-1 (see Section 4.18). The removal of access roads created for the OWEF following decommissioning will have the greatest effect on avoiding impacts resulting from inadvertent discoveries of, or unanticipated damage to, archaeological sites from the public by reducing potential unregulated use of the project area.

4.4.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.4.2. Only those significance criteria which were determined in Section 4.4.2 to be relevant to the project are addressed below.

Construction

- **CR-1.** With the implementation of Mitigation Measures CUL-1 through CUL-6 and Mitigation Measure CUL-8, construction of the proposed OWEF would not result in a substantial adverse change in the significance of the informative values of the identified archaeological resources. Construction activities would also occur in full compliance with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, construction of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, CUL-7 and CUL-8, construction of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Construction activities would also occur in full compliance with all applicable standards and requirements.

Operation

- **CR-1.** With the implementation of Mitigation Measures CUL-10, CUL-11, and CUL 12, operation and maintenance of the proposed OWEF would not result in a substantial adverse change in the significance of the informative values of the identified archaeological resources. Operation and maintenance activities would occur in full compliance with the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, operation of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, and CUL-7, and CUL-8, operation and maintenance of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Operation and maintenance activities would occur in full compliance with all applicable standards and requirements.

Decommissioning

- **CR-1.** With the implementation of Mitigation Measures CUL-1 through CUL-6 and Mitigation Measure CUL-8, decommissioning of the proposed OWEF would not result in a substantial adverse change in the significance of the informative values of the identified archaeological resources, as decommissioning activities would occur in full compliance the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, decommissioning of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, and CUL-7, and CUL-8 , decommissioning of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Decommissioning activities would occur in full compliance with all applicable standards and requirements.

4.4.4 Alternative 2: 137 Wind Turbine Generators

4.4.4.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for Alternative 2 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Both direct and indirect construction impacts for Alternative 2 are similar to Alternative 1, the proposed project. In particular, the construction of wind turbines within the TCP would result in visual and auditory effects that have the potential to impact the use of these locations for religious purposes, and adverse effects may also occur to additional ritual sites and traditional uses of the landscape surrounding the project site. However, there is a slight reduction in the potential for unanticipated discoveries of cultural resources on Alternative 2 relative to the reduction in the construction footprint compared to the proposed project.

Operation and Maintenance

Both direct and indirect operation and maintenance impacts for Alternative 2 are similar to Alternative 1, the proposed project. In particular, during the operation period, wind turbines within the TCP would result in visual and auditory effects that have the potential to impact the use of these locations for religious purposes, and adverse effects may also occur to additional ritual sites and traditional uses of the landscape surrounding the project site. However, there is a slight reduction in the potential for unanticipated discoveries of cultural resources on Alternative 2 relative to the reduction in the operation and maintenance footprint compared to the proposed project.

Decommissioning

Both direct and indirect decommissioning impacts for Alternative 2 are similar to Alternative 1, the proposed project. There is a slight reduction in the potential for unanticipated discoveries of cultural resources on Alternative 2 relative to the reduction in the decommissioning footprint compared to the proposed project. However, tribes may still consider the post-decommissioning impacts on the TCP to be substantial.

4.4.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 2 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.4.2. Only those significance criteria which were determined in Section 4.4.2 to be relevant to the project are addressed below.

Construction

- **CR-1.** With the implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3, construction of the proposed OWEF would not result in a substantial adverse change in the significance of an historic archaeological resource. Construction activities would also occur in full compliance with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, construction of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, CUL-7 and CUL-8, construction of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Construction activities would also occur in full compliance with all applicable standards and requirements.

Operation

- **CR-1.** Operation and maintenance of the proposed OWEF would not result in a substantial adverse change in the significance of a historic resource. Operation and maintenance activities would occur in full compliance with the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, operation of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, and CUL-7, and CUL-8, operation and maintenance of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Operation and maintenance activities would occur in full compliance with all applicable standards and requirements.

Decommissioning

- **CR-1.** Decommissioning of the proposed OWEF would not result in a substantial adverse change in the significance of a historic resource, as decommissioning activities would occur in full compliance the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, decommissioning of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, and CUL-7, and CUL-8 , decommissioning of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Decommissioning activities would occur in full compliance with all applicable standards and requirements.

4.4.5 Alternative 3: 105 Wind Turbine Generators

4.4.5.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for Alternative 3 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Both direct and indirect construction impacts for Alternative 3 are similar to Alternative 1, the proposed project. In particular, the construction of wind turbines within the TCP would result in visual and auditory effects that have the potential to impact the use of these locations for religious purposes, and adverse effects may also occur to additional ritual sites and traditional uses of the landscape surrounding the project site. There is a slight reduction in the potential for unanticipated discoveries of cultural resources on Alternative 3 relative to the reduction in the construction footprint compared to the proposed project.

Operation and Maintenance

Both direct and indirect operation and maintenance impacts for Alternative 3 are similar to Alternative 1, the proposed project. In particular, during the operation period, wind turbines within the TCP would result in visual and auditory effects that have the potential to impact the use of these locations for religious purposes, and adverse effects may also occur to additional ritual sites and traditional uses of the landscape surrounding the project site. There is a slight reduction in the potential for unanticipated discoveries of cultural resources on Alternative 3 relative to the reduction in the operation and maintenance footprint compared to the proposed project.

Decommissioning

Both direct and indirect decommissioning impacts for Alternative 3 are similar to Alternative 1, the proposed project. There is a slight reduction in the potential for unanticipated discoveries of cultural resources on Alternative 3 relative to the reduction in the decommissioning footprint compared to the proposed project. However, tribes may still consider the post-decommissioning impacts on the TCP to be substantial.

4.4.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 3 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.4.2. Only those significance criteria which were determined in Section 4.4.2 to be relevant to the project are addressed below.

Construction

- **CR-1.** With the implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3, construction of the proposed OWEF would not result in a substantial adverse change in the significance of an historic archaeological resource. Construction activities would also occur in full compliance with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, construction of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, CUL-7 and CUL-8, construction of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Construction activities would also occur in full compliance with all applicable standards and requirements.

Operation

- **CR-1.** Operation and maintenance of the proposed OWEF would not result in a substantial adverse change in the significance of a historic resource. Operation and maintenance activities would occur in full compliance with the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements.
- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, operation of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, and CUL-7, and CUL-8, operation and maintenance of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Operation and maintenance activities would occur in full compliance with all applicable standards and requirements.

Decommissioning

- **CR-1.** Decommissioning of the proposed OWEF would not result in a substantial adverse change in the significance of a historic resource, as decommissioning activities would occur in full compliance the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements.

- **CR-2.** The proposed OWEF has been designed to avoid physically affecting the identified archaeological sites within the project site. Further, because the project site, consisting of the APE, is not a historic resource or archaeological resource for purposes of the CEQA analysis, decommissioning of the proposed OWEF would not result in a significant impact to any historic or archaeological resources.
- **CR-3.** With the implementation of Mitigation Measures CUL-5, CUL-6, and CUL-7, and CUL-8 , decommissioning of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Decommissioning activities would occur in full compliance with all applicable standards and requirements.

4.4.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.4.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur. Existing conditions relevant to cultural resources would continue, but may be altered at some point in the future by construction of a potential wind energy or other development project. No impact associated with the OWEF would occur.

4.4.6.2 CEQA Significance Determinations

Alternative 4 would not result in impacts to cultural resources.

4.4.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.4.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to cultural resources would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur.

4.4.7.2 CEQA Significance Determinations

Alternative 5 would not result in impacts to cultural resources. However, in the absence of this project, other renewable energy projects may be constructed at the project site or elsewhere to meet State and Federal mandates, and those projects could have impacts similar to those of the proposed OWEF.

4.4.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.4.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project were to be implemented, similar impacts to cultural resources as those described for the proposed OWEF (Alternative 1) could occur if the developer of said future development adopts similar avoidance measures in the design of the wind farm.

4.4.8.2 CEQA Significance Determinations

Alternative 6 would not result in impacts to cultural resources.

4.4.9 Cumulative Impacts

Cumulative impacts on cultural resources take into account the proposed action's impacts as well as those likely to occur as a result of other existing, proposed and reasonably foreseeable projects. When analyzing cumulative impacts on cultural resources, an assessment is made of the impacts on individual resources as well as the inventory of cultural resources within the cumulative impact analysis area. Since the proposed action alternatives have been designed to avoid physical impacts to cultural resources from construction, operation, and decommissioning, the project is not expected to cumulatively contribute to physical impacts. This cumulative analysis is focused on the proposed action's potential contributions to other types of impacts to cultural resources in the area, particularly the TCP.

4.4.9.1 Geographic Extent/Context

The regulations implementing Section 106 of the NHPA contemplate close coordination between the NEPA and NHPA processes (36 CFR §800.8), and expressly integrate consideration of cumulative concerns within the analysis of a proposed action's potential direct and indirect effects by defining "adverse effect" to include "reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative" (36 CFR §800.5(a)(1)).

The geographic scope of the cumulative effects analysis for cultural resources is the APE plus a 10-mile radius around the OWEF site. This is a large enough area to encompass any effects of the OWEF on cultural resources that may combine with similar effects caused by other projects and provides a reasonable context wherein cumulative actions could affect cultural resources. For instance, the visibility of the proposed OWEF from surrounding areas could alter the context of nearby historic and prehistoric properties, or affect certain ethnographic values attributed to the area. Because the visibility of the proposed OWEF diminishes substantially beyond ten miles (see Figure 4.18-1, Project Viewshed Map), a ten-mile radius around the OWEF site represents an appropriate geographic limit for the cumulative impact analysis for cultural resources.

Determining the temporal scope requires estimating the length of time the effects of the proposed action will last, either individually or in combination with other anticipated effects. The temporal scope of impacts to cultural resources during the development of cumulative projects along with the OWEF would be the through the end of project decommissioning, because any direct or indirect effects of the project would only occur during the life of the project.

4.4.9.2 Existing Cumulative Conditions

Cumulative conditions to cultural resources involve the disturbance of culturally significant resources, and alteration of the historic and cultural landscape of the area over time. In the past, cultural resources have sometimes been damaged or destroyed by development projects, resulting in the loss of potential knowledge. In more recent times, this has become less common, especially for projects undergoing environmental review under NEPA or CEQA, as laws now provide various protections for cultural resources. Development projects in the region have resulted in the damage or destruction of cultural resources, and the area has hosted various human activities in the past and certain activities, such as recreation, continue today. In recent times, the severity of impacts to previously unknown cultural resources has been reduced by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for significant resources.

4.4.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Many of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR for the geographic area described above in Section 4.4.9.1. The projects that are located within the geographic extent for cumulative analysis of cultural resources are presented in Table 4.1-2 and listed below:

- ESJ Wind Project I
- Imperial Valley Solar – Solar Two
- Coyote Wells Specific Plan
- Ketchum Ranch
- Elder – TPM 20981
- Grizzle – TPM 20719
- Pacific Bell Cell Site
- Sunrise Powerlink
- SDG&E Proposed Photovoltaic Solar Field
- Renewergy, LLC

Of the projects listed above, EIS or EIR documents have been published for four of the projects. Table 4.4-2 (below) provides information from those EIS and EIR documents, including information on the number of historic and prehistoric cultural resources directly or indirectly affected by those projects. These projects are in the various stages of permitting or construction.

Table 4.4-2. Cumulative Projects within the Cultural Resources Geographic Extent/Context

Project Name	Location	Project Type	Project Description	Cultural Sites
Sunrise Powerlink (SRPL)	Imperial Co. and San Diego Co.	High-voltage Transmission Line	150-mile transmission line from Imperial County to Sycamore Canyon near Poway.	28 archaeological sites in San Diego County 8 archaeological sites in Imperial County
Coyote Wells Specific Plan	Imperial Co. Within the Ocotillo/ Nomirage Community Area Plan	Residential	The Specific Plan includes 22 parcels and 10 land use designations, and would be comprised of two main components, the open space/recreational area and the open space/preservation area. Other land uses within these areas include tourism, residential, storage, hotel/resort, and infrastructure.	55 prehistoric sites 12 historic resources
Imperial Valley Solar Project (IVSP)	Imperial Co. North of I-8 in southwestern Imperial County, approximately 4 miles east of Ocotillo.	Solar Energy (Renewable)	Development of up to 750 MW of energy on 6,140 acres of BLM-administered public lands and on 300 acres of private lands.	145 prehistoric resources 62 historic resources
ESJ Wind Projects	Northern Baja CA, Mexico, in the Sierra Juárez mountains.	Wind Energy (Renewable)	ESJ Wind Project I - Development of 400 MW of wind generation. ESJ Wind Project II - Development of 300 MW of wind generation. ESJ Wind Project III - Development of 420 MW of wind generation.	3 prehistoric sites (US portion)

Almost 3.5 miles of the SRPL transmission line traverses the OWEF site. The median distance between each of the 500-kV lattice towers in this area (referred to as the Imperial Valley Link) is 1,615 feet (Aspen, 2008). Given this span between towers, 11 towers would be located within the OWEF APE.

4.4.9.4 Construction

The OWEF has been designed to avoid physical effects to most known archaeological resources; however, the proposed OWEF would adversely affect one significant historical resource the proposed TCP and all its contributing elements, including the Spoke Wheel Geoglyph. In addition, there is the potential for unanticipated damage or inadvertent discoveries of unknown resources during the construction phase of the OWEF. If any unanticipated resources are encountered during construction, measures to reduce impacts to these resources would be implemented. Construction of other projects located in the geographic area for the cumulative analysis (described in Section 4.4.9.1, above) could also result in damage to previously unknown resources encountered during construction.

Based on the above analysis the proposed OWEF will contribute in a small but measurable way to adverse cumulative impacts on cultural resources. For instance, while physical impacts to historic properties can often be avoided, projects and activities in the vicinity of an historic properties can alter the context of the resource by changing its surroundings, potentially degrading the value of the resource. Similarly, individual projects can contribute to the degradation of certain ethnographic values of an area simply by altering the landscape, particularly as related to Native American cultures, even though no cultural resources are physically affected. This could include alteration of important views, modification of traditional landscapes, or limitations on traditional uses of an area.

The proposed OWEF will contribute to the alteration of culturally important landscapes (the TCP) through the construction of wind turbine generators, which are visually prominent structures. Based on the results of BLM consultation with Native Americans, these visual changes will adversely affect the setting for resource that is assumed eligible for listing in the NRHP and will degrade certain qualities of the landscape that are important to Native American culture. Other projects with visually prominent features, such as the SRPL transmission line, will also contribute to changes in visual conditions and, therefore, will also contribute to cumulative impacts on culturally important views and landscapes.

In summary, the OWEF impacts, when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the adverse impacts for cultural resources. The majority of the proposed future projects examined in this analysis would likely undergo CEQA and/or NEPA review. Sites that could not be avoided would be tested to evaluate significance. Register-eligible sites would be subject to historical documentation or data recovery excavations to mitigate impacts. Although these measures would reduce most individual site impacts to less than significant levels, archaeological excavation and analysis cannot recover all the scientific values of a site. The destruction of cultural resources and cultural landscapes results in the loss of information, but also to irreparable damage to cultural and spiritual values. In terms of the loss of information mitigation can reduce the impact of this destruction, but not to a less-than-significant level. In terms of cultural and spiritual impacts, the nature of these impacts and potential mitigation measures can only be determined by members of the community who value the resources and landscapes, in this case Native Americans. Native Americans have indicated that this cumulatively considerable impact is unmitigatable.

Despite the correct implementation of the mitigation measures outlined here, OWEF's incremental contribution to cumulative impacts to cultural resources would nonetheless be adverse.

4.4.9.5 Operation and Maintenance

As described above, the proposed OWEF has been designed to avoid known archaeological resources and thus would have no physical lasting effects on those resources. In addition, with implementation of BLM BMPs and project-specific mitigation measures listed in Section 4.4.10, adverse effects on any known or unknown historic and archaeological resources that could potentially be encountered during operation and maintenance activities would be mitigated by ensuring identification, evaluation, avoidance, and protection of those resources.

Physical impacts to cultural resources can be avoided or minimized through the implementation of mitigation measures that result in the avoidance of physical impacts to archaeological sites and the permanent preservation of culturally significant resources by reducing and/or controlling public access to culturally sensitive areas. These measures reduce the cumulative impacts of construction projects on cultural resources, and have resulted in beneficial cumulative effects by identifying and preserving cultural resources and contributing to knowledge about the prehistoric and historic resources in the area.

However, once constructed, the OWEF and other projects may contribute to cumulative impacts on cultural resources in other ways by altering culturally important landscapes and views, as described above (see Section 4.4.9.4). These visual changes will adversely affect the setting for historic properties that may be eligible for listing in the NRHP and could also degrade certain qualities of the landscape that are important to Native American culture. Given these factors, the operation of the proposed OWEF is expected to directly contribute to cumulative impacts on cultural resources within the geographic extent.

4.4.9.6 Decommissioning

The decommissioning of the OWEF, consistent with a BLM-approved decommissioning plan, would greatly reduce any project-related contributions to cumulative effects. In addition, it is unlikely that any unanticipated resources would be discovered during decommissioning activities, as such all cultural resources at the site would probably have been previously identified during either construction or operation. Therefore, OWEF decommissioning would not contribute to any adverse cumulative impacts on cultural resources. In addition, with decommissioning and restoration, the OWEF site would be restored to a condition similar to pre-construction conditions, and any effect that the project may have on culturally important landscapes, views, or traditional uses of the area would be eliminated or substantially reduced.

4.4.9.7 CEQA Significance Determinations

Construction

- **CR-1.** Construction of the proposed OWEF would not have a cumulatively considerable impact to this historic resource, especially considering that construction activities would need to fully comply with the BLM BMPs, the proposed mitigation measures, and with all applicable standards and requirements. No other historic resources would be directly affected by OWEF construction. However, construction of the project would change visual conditions in the area and, therefore, could contribute to adverse cumulative effects on the context and setting for historic built-environment resources in the area. Mitigation Measures CUL-1 through CUL-6 and Mitigation Measure CUL-8 would reduce the project's contribution to this impact.
- **CR-2.** Construction of the proposed OWEF would not contribute to cumulative impacts on archaeological resources, as the project has been designed to avoid physical impacts to all such resources identified in the project area. Mitigation measures are proposed to help further ensure that the project does not physically affect any archaeological resources. However, construction of the project would change visual conditions in the area and, therefore, would contribute to adverse cumulative effects on culturally important landscapes, particularly the TCP. Mitigation Measures CUL-4 through CUL-9, as well as the measures proposed in the MOA, would reduce the project's contribution to this impacts.
- **CR-3.** Construction of the proposed OWEF would not result in the disturbance of any known human remains, including those interred outside of formal cemeteries. Mitigation Measures CUL-5, CUL-6, and CUL-7 would help avoid impacts associated with the disturbance of any unknown human remains that may be encountered during construction. Therefore, the project would not make a significant contribution to any impacts related to disturbance of human remains. Mitigation Measures CUL-5 through CUL-8 would reduce the project's contribution to this impact.

Operation

- **CR-1.** Operation and maintenance of the OWEF would not directly contribute to any cumulative physical impacts on historic resources. However, the project would change visual conditions in the area and, therefore, could contribute to adverse cumulative effects on the context and setting for historic resources in the area. Mitigation Measures CUL-10 through CUL-12 would reduce the project's contribution to this impact.

- **CR-2.** Operation and maintenance of the proposed OWEF would not contribute to cumulative impacts on archaeological resources, as the project has been designed to avoid physical impacts to all such resources identified in the project area. Mitigation measures are proposed to help further ensure that the project does not physically affect any archaeological resources. However, construction of the project would change visual conditions in the area and, therefore, would contribute to adverse cumulative effects on culturally important landscapes, particularly the TCP. Mitigation Measure CUL-9, as well as the measures proposed in the MOA, would reduce the project's contribution to this impact.

- **CR-3.** Operation and maintenance of the proposed OWEF is not expected to result in the disturbance of any human remains. Mitigation Measures CUL-5, CUL-6, and CUL-7 would help avoid impacts associated with the disturbance of any unknown human remains that may be encountered during project operation and maintenance. Therefore, the project would not make a significant contribution to any impacts related to disturbance of human remains. Mitigation Measures CUL-5 through CUL-8 would reduce the project's contribution to this impact.

Decommissioning

- **CR-1.** The decommissioning of the OWEF, consistent with a BLM-approved decommissioning plan, would greatly reduce the potential for any project-related contributions to cumulative effects on historic resources. Therefore, OWEF decommissioning would not have any significant cumulative impacts on historic resources. Mitigation Measures CUL-5 through CUL-6 and Mitigation Measure CUL-8 would reduce the project's contribution to this impact.

- **CR-2.** Consistent with a BLM-approved decommissioning plan, the proposed OWEF would not result in a significant cumulative impact on archaeological resources. With restoration of the site after decommissioning, any effect that the project may have on culturally important landscapes, views, or traditional uses of the area would be eliminated or substantially reduced.

- **CR-3.** Consistent with a BLM-approved decommissioning plan, decommissioning of the proposed OWEF would not result in the disturbance of any human remains, including those interred outside of formal cemeteries. Therefore, project decommissioning would not result in a cumulatively considerable impact with regard to human remains. Mitigation Measures CUL-5 through CUL-8 would reduce the project's contribution to this impact.

4.4.10 Mitigation Measures

The proposed OWEF would include implementation of recommended BMPs from BLM's Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States (BLM, 2005). The applicable BLM BMPs are presented below. In addition, project-specific mitigation measures are presented to minimize and avoid adverse effects on cultural resources.

A draft Memorandum of Agreement (MOA) containing measures to avoid, minimize, and resolve the adverse effects of the OWEF was distributed to the consulting parties, and is currently being revised through Section 106 consultation. A draft MOA is included in Appendix R. Mitigation Measure CUL-9

(*Continue consultation with Native American and other traditional groups*) would ensure continued consultation with Tribes and resolution of adverse effects to the TCP and its contributing elements including the Spoke Wheel Geoglyph should the project be approved. The MOA will set forth the final mitigation to resolve the adverse effects to cultural resources identified in connection with the OWEF and alternatives. As explained below, these measures may be similar to, or derivations of, the measures presented and analyzed in the Draft EIS/EIR. Mitigation measures in the draft MOA that will be further developed as the MOA is revised and finalized include: (1) the development and preparation of a Historic Property Treatment Plan (HPTP) which will require off site mitigation such as Applicant funding for the preparation of an ethnographic study to further explore and understand the larger TCP, its boundaries and contributing elements, Applicant funding to support and enhance public education, interpretation and tribal language programs, and the identification and implementation of resource protection measures during construction such as fencing, gating, and law enforcement patrols. The MOA also requires the development of a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects, a NAGPRA Plan of Action and a Long Term Monitoring Program.

BLM Best Management Practices

- The size of cleared and disturbed lands shall be minimized as much as possible. Existing roads and borrow pits shall be used as much as possible.
- A monitoring program shall be developed to ensure that environmental conditions are monitored during the construction, operation, and decommissioning phases. The monitoring program requirements, including adaptive management strategies, shall be established at the project level to ensure that potential adverse impacts of wind energy development are mitigated. The monitoring program shall identify the monitoring requirements for each environmental resource present at the site, establish metrics against which monitoring observations can be measured, identify potential mitigation measures, and establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and BMPs.
- The BLM will consult with Indian Tribal governments early in the planning process to identify issues regarding the proposed wind energy development, including issues related to the presence of cultural properties, access rights, disruption to traditional cultural practices, and impacts to visual resources important to the Tribe(s).
- The presence of archaeological sites and historic properties in the area of potential effect shall be determined on the basis of a records search of recorded sites and properties in the area and/or, depending on the extent and reliability of existing information, an archaeological survey. Archaeological sites and historic properties present in the area of potential effect shall be reviewed to determine whether they meet the criteria of eligibility for listing on the National Register of Historic Places (NRHP).
- When any ROW application includes remnants of a National Historic Trail, is located within the viewshed of a National Historic Trail's designated centerline, or includes or is within the viewshed of a trail eligible for listing on the NRHP, the operator shall evaluate the potential visual impacts to the trail associated with the proposed project and identify appropriate mitigation measures for inclusion as stipulations in the POD.
- If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a cultural resources management plan (CRMP)[1] shall be developed. This plan shall address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and

---

[1] The Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects described in Mitigation Measure CUL-3 is serving the purpose of a CRMP.

excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and earthmoving in the high-potential area. A report shall be prepared documenting these activities. The CRMP also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land.

Project-Specific Mitigation Measures

All action alternatives (Alternatives 1, 2, and 3) analyzed for this document have the potential to cause an adverse effect on significant cultural resources. In addition to the BLM BMPs listed above, project-specific mitigation measures have been developed to reduce, avoid or resolve potential cultural resources impacts associated with construction, operation, and decommissioning of the proposed OWEF or an alternative. These project-specific mitigation measures presented below shall be applied to mitigate impacts under CEQA and NEPA and shall be coordinated through the Section 106 consultation process and development of the draft MOA (see Appendix R).

CUL-1 **Identify and evaluate cultural resources in final Area of Potential Effects (APE).** The Applicant shall provide sufficient technical data to enable the BLM to properly evaluate the significance of all potentially affected cultural resources. Cultural resources data collection shall be conducted by professionals meeting the Secretary's Standards and in accordance with those Standards, to provide recommendations with regard to their eligibility for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), or local registers. Preliminary determinations of NRHP eligibility will be made by the BLM, in consultation with Imperial County and other appropriate consulting parties, Native American tribes, and the State Historic Preservation Officer (SHPO).

CUL-2 **Avoid and protect potentially significant resources.** Where feasible, potentially NRHP-eligible resources and CRHR-eligible resources shall be protected from project impacts by project redesign to the extent not already address by existing reconfigurations. Complete avoidance of impacts to such resources shall be the preferred protection strategy, and avoidance of direct physical effects is the preferred treatment measure for historic properties to which Native American tribes attach sacred or religious significance. The BLM would achieve this preferred treatment by conditioning the ROW grant to exclude those historic properties, or lands from the project where feasible. On the basis of preliminary NRHP eligibility assessments or previous determinations of resource eligibility, the BLM and Imperial County, in consultation with the SHPO, may request the relocation of the project area where relocation would avoid or reduce damage to cultural resource values.

Where the BLM and Imperial County, in consultation with the Applicant, decide that potentially NRHP-eligible and/or CRHR-eligible cultural resources cannot be protected from impacts by project redesign, or that avoidance is not feasible, the Applicant shall undertake additional studies needed by the BLM to evaluate the resources' NRHP and/or CRHR eligibility and to recommend further mitigating treatment. The nature and extent of this evaluation shall be determined by the BLM in consultation with the consulting parties and shall be based upon final project engineering specifications. Evaluations will be based on surface remains, subsurface testing, archival and ethnographic resources, and in the framework of the historic context and important research questions of the project area.

Results of those evaluation studies and recommendations for mitigation of project effects shall be incorporated into a Historic Properties Treatment Plan (HPTP).

All potentially NRHP-eligible and/or CRHR-eligible resources or resources that are treated as eligible for project management purposes that will not be affected by physical impacts, but are within 150 feet of such impact areas, will be designated as Environmentally Sensitive Areas (ESAs) to ensure that construction activities do not encroach onsite peripheries. Protective fencing, or other markers (after approval by Imperial County/BLM), shall be erected and maintained to protect ESAs from inadvertent trespass for the duration of construction in the vicinity. ESAs shall not be identified specifically as cultural resources. A monitoring program shall be developed as part of a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects and implemented by the Applicant to ensure the effectiveness of ESA protection.

CUL-3 **Develop and implement a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects.** Upon approval of the inventory report and the NRHP and CRHR eligibility evaluations, the Applicant shall prepare and submit for approval a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects (Management Plan). The Management Plan shall define and map all known cultural resources within 150 feet of all project APEs. The Management Plan shall also detail how resources will be marked and protected as ESAs during construction. The Management Plan shall define any additional areas that are considered to be of high-sensitivity for discovery of buried significant cultural resources, including burials, cremations, or sacred features. This sensitivity evaluation shall be conducted by an archaeologist who meets the Secretary of the Interior's Standards and who takes into account geomorphic setting and surrounding distributions of archaeological deposits. The Management Plan shall detail provisions for monitoring construction in these high-sensitivity areas. It shall also detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native Americans, and assessing register-eligibility in the event that unknown cultural resources are discovered during construction. For all unanticipated cultural resource discoveries, the Management Plan shall detail the methods, consultation procedures, and timelines for assessing register-eligibility, formulating a mitigation plan, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be approved by the BLM, Imperial County, and the SHPO prior to implementation.

CUL-4 **Develop an HPTP and conduct data recovery or other actions to resolve adverse effects.** If NRHP-eligible and/or CRHR-eligible resources, as determined by the BLM and SHPO, cannot be protected from impacts of the proposed project, data-recovery investigations or other mitigation shall be conducted by the Applicant to resolve adverse effects to the characteristics of each property that contribute to its NRHP and/or CRHR eligibility. As part of the HPTP, the Applicant shall prepare a research design and a scope of work for data recovery or additional treatment of NRHP-eligible and/or CRHR-eligible sites that cannot be avoided and to resolve effects. Treatment of significant cultural resources shall follow the procedures established by the Advisory Council on Historic Preservation for compliance with Section 106 of the National Historic Preservation Act and other appropriate State and local regulations. The HPTP shall be submitted to the BLM for review and approval.

For sites eligible under Criterion (d), significant data could be recovered through excavation and analysis. For properties eligible under Criteria (a), (b), or (c), mitigation may include but is not limited to historical documentation, photography, collection of oral histories, architectural or engineering documentation, preparation of a scholarly work, or some form of public awareness or interpretation. Data gathered during the evaluation phase studies and the research design element of the HPTP shall guide plans and data thresholds for data recovery; treatment will be based on the resource's research potential beyond that realized during resource recordation and evaluation studies. If data recovery is necessary, sampling for data-recovery excavations will follow standard statistical sampling methods, but sampling will be confined, as much as possible, to the physical impact area. Data-recovery methods, sample sizes, and procedures shall be detailed in the HPTP and implemented by the Applicant only after approval by the BLM. Construction work within 150 feet of cultural resources that require data-recovery fieldwork shall not begin until authorized by the BLM to ensure that impacts to known significant archaeological deposits are adequately resolved.

The HPTP shall include provisions for reporting of results, curation of artifacts and data (maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by BLM, and dissemination of reports. The BLM will retain ownership of artifacts collected from BLM managed lands. The Applicant shall attempt to gain permission for artifacts from privately held land to be curated with the other project collections. The HPTP shall specify that archaeologists and other discipline specialists conducting the studies meet the Secretary of the Interior's Standards (per 36 Code of Federal Regulations [CFR] 61).

A description of alternative treatments to resolve adverse effects that are not data recovery may include (but are not limited to):

- Historical documentation for built-environment resources such as that completed for the Historic American Building Survey/Historic American Engineering Record program;
- Placement of construction in parts of historic properties that do not contribute to the qualities that make the resource eligible for the NRHP;
- Deeding cemetery areas into open space in perpetuity and providing the necessary long-term protection measures;
- Public interpretation including the preparation of a public version of the cultural resources studies and/or education materials for local schools;
- Access by Native American tribes to traditional areas on the project site after the project has been constructed;
- Support by Applicant to cultural centers in the preparation of interpretive displays; and
- Consideration of other off-site mitigation.

CUL-5 **Monitor construction at known ESAs.** The Applicant shall implement full-time archaeological monitoring by a professional archaeologist during ground-disturbing activities at all cultural resource ESAs. These locations and their protection boundaries shall be defined and mapped in the CRMP. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historical and prehistoric resources that could be encountered within the project, and under direct supervision of a principal archaeologist. The qualifications of the principal archaeologist and archaeological monitors shall be approved by the BLM.

A Native American monitor may be required at culturally sensitive locations specified by the BLM following government-to-government consultation with Native American tribes. The

CRMP shall indicate the locations where Native American monitors will be required. The Applicant shall retain and schedule any required Native American monitors.

Compliance with and effectiveness of any cultural resources monitoring required by the CRMP shall be documented by the Applicant in a monthly report to be submitted to the BLM for the duration of project construction. In the event that cultural resources are not properly protected by ESAs, all project work in the immediate vicinity shall be diverted to a buffer distance determined by the archaeological monitor until authorization to resume work has been granted by the BLM and Imperial County.

The Applicant shall notify the BLM of any damage to cultural resource ESAs. If such damage occurs, the Applicant shall consult with the BLM to mitigate damages and to increase effectiveness of ESAs. At the discretion of the BLM and Imperial County, such mitigation may include, but not be limited to, modification of protective measures, refinement of monitoring protocols, data-recovery investigations or payment of compensatory damages in the form of non-destructive cultural resources studies or protection within or outside the license area, at the discretion of the BLM.

CUL-6 **Train construction personnel.** All construction personnel shall be trained regarding the recognition of possible buried cultural remains and protection of all cultural resources, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. The Applicant shall complete training for all construction personnel and retain documentation showing when training of personnel was completed. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including Native American burials. Training shall inform all construction personnel that ESAs must be avoided and that travel and construction activity must be confined to designated roads and areas. All personnel shall be instructed that unauthorized collection or disturbance of artifacts or other cultural materials on or off the ROW by the Applicant, his representatives, or employees will not be allowed. Violators will be subject to prosecution under the appropriate State and federal laws and violations will be grounds for removal from the project. Unauthorized resource collection or disturbance may constitute grounds for the issuance of a stop work order. The following issues shall be addressed in training or in preparation for construction:

- All construction contracts shall require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits, their responsibility to avoid and protect all cultural resources, and the penalties for collection, vandalism, or inadvertent destruction of cultural resources.
- The Applicant shall provide training for supervisory construction personnel describing the potential for exposing cultural resources, the location of any potential ESA, and procedures and notifications required in the event of discoveries by project personnel or archaeological monitors. Supervisors shall also be briefed on the consequences of intentional or inadvertent damage to cultural resources. Supervisory personnel shall enforce restrictions on collection or disturbance of artifacts or other cultural resources.

CUL-7 **Properly treat human remains.** All locations of known Native American human remains shall be avoided through project design and shall be protected by designation as ESAs. The Applicant shall follow all State and federal laws, statutes, and regulations that govern the treatment of human remains. The Applicant shall assist and support the BLM in all required Section 106, government to-government and Native American Graves Protection and Repatriation Act (NAGPRA) consultations with Native Americans, agencies and commissions, and consulting parties as requested by the BLM. The Applicant shall comply with and implement all required actions and studies that result from such consultations. If human remains are discovered during construction, all work shall be diverted from the area of the discovery and the BLM authorized officer shall be informed immediately. Avoidance and protection of inadvertent discoveries which contain human remains shall be the preferred protection strategy with complete avoidance of impacts to such resources protected from physical project impacts by project redesign. The Applicant shall follow all State and federal laws, statutes, and regulations that govern the treatment of human remains. The Applicant shall comply with and implement all required actions and studies that result from such consultations, as directed by the BLM.

CUL-8 **Monitor construction in areas of high sensitivity for buried resources.** The Applicant shall implement archaeological monitoring by a professional archaeologist during subsurface construction disturbance at all locations identified in the Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects as highly sensitive for buried prehistoric or historical archaeological sites or Native American human remains. These locations and their protection boundaries shall be defined and mapped in the Management Plan. Intermittent monitoring may occur in areas of moderate archaeological sensitivity at the discretion of the BLM and Imperial County. Upon discovery of potential buried cultural materials by archaeologists or construction personnel, or damage to an ESA, work in the immediate area of the find shall be diverted and the BLM Authorized Officer or his/her designee shall be notified immediately. Once the find has been inspected and a preliminary assessment made, the Applicant's archaeologist will consult with the BLM, as appropriate, to make the necessary plans for evaluation and treatment of the find(s) or mitigation of adverse effects to ESAs, in accordance with the Secretary's Standards, and as specified in the Management Plan.

CUL-9 **Continue consultation with Native American and other traditional groups.** The Applicant shall provide assistance to the BLM, as requested by the BLM, to continue required government to-government consultation with interested Native American tribes and individuals (Executive Memorandum of April 29, 1994, and Section 106 of the National Historic Preservation Act) and other traditional groups to assess or mitigate the impact of the approved project on traditional cultural properties or other resources of Native American concern, such as sacred sites and landscapes, or areas of traditional plant gathering for food, medicine, basket weaving, or ceremonial uses. As directed by the BLM, the Applicant shall undertake required treatments, studies, or other actions that result from such consultation. Actions that are required during or after construction shall be defined, detailed, and scheduled in the HPTP and implemented by the Applicant.

CUL-10 **Protect and monitor NRHP-eligible and/or CRHR-eligible properties.** The Applicant shall design and implement a long-term management plan to protect NRHP-eligible, CRHR-eligible sites or sites treated as eligible for project management purposes from direct physical impacts of project operation and maintenance and from more indirect impacts (such as erosion and access) that could result from the presence of the project. The plan shall be developed in consultation with the BLM and other consulting parties to design measures that will be effective against project maintenance impacts, such as vegetation clearing and road and tower maintenance, and project-related vehicular impacts. The plan shall also include protective measures for the cultural resources within the transmission line corridor or main project area that may experience operational and access impacts as a result of the project. Measures considered shall include restrictive fencing or gates, permanent access road closures, signage, stabilization of potential erosive areas, site capping, site patrols, and interpretive/educational programs, or other measures that will be effective for protecting the resources. The plan shall be property specific and shall include provisions for monitoring and reporting its effectiveness and for addressing inadequacies or failures that result in damage to resources.

Monitoring of sites selected during consultation with BLM shall be conducted annually by a professional archaeologist for a minimum period of 5 years. Monitoring shall include inspection of all site loci and defined surface features, documented by photographs from fixed photo monitoring stations and written observations. A monitoring report shall be submitted to the BLM within 1 month following the annual resource monitoring. The report shall indicate any properties that have been affected by erosion, unauthorized excavation or collecting or vehicle or maintenance impacts. For properties that have been impacted, the Applicant shall provide recommendations for mitigating impacts and for improving protective measures. After 5 years of resource monitoring, the BLM will evaluate the effectiveness of the protective measures and the monitoring program. Based on that evaluation, the BLM or Imperial County may require that the Applicant revise or refine the protective measures, or alter the monitoring protocol or schedule. If the BLM does not authorize alteration of the monitoring protocol or schedule, those shall remain in effect for the duration of project operation.

If the annual monitoring program identifies adverse effects to NRHP-eligible and/or CRHR-eligible properties from operation or long-term presence of the project, or if, at any time, the Applicant, BLM or Imperial County become aware of such adverse effects, the Applicant shall notify the BLM immediately and implement additional protective measures, as directed by the BLM. At the discretion of the BLM such measures may include, but not be limited to, refinement of monitoring protocols, data-recovery investigations, or payment of compensatory damages in the form of nondestructive cultural resources studies or protection.

CUL-11 **Control unauthorized access.** The Applicant shall coordinate with the authorized officer of the BLM or local landowner/administrator at least 60 days before construction in order to determine if gates shall be installed on access roads, especially trails that would be dually used as access roads, to prevent unauthorized vehicular access to the ROW. Gate installation shall be required at the discretion of the land management agency. On trails proposed for multiple use as access roads, gates shall be wide enough to allow horses, bicycles, and pedestrians to pass through. The Applicant shall document its coordination efforts with the administering agency of the road/trail and provide this documentation to the administering agency and all affected jurisdictions 30 days prior to construction. Signs prohibiting unauthorized use of the access roads shall be posted on the installed gates.

CUL-12 **Funding of ranger and law enforcement patrols.** To control unauthorized use of project access roads and to provide for the general protection of cultural and natural resources made more accessible as a result of the project facilities, the Applicant shall provide funding to land management entities for general ranger and law enforcement patrols for the term of the ROW. The responsible land management entities will formulate what funding is reasonable to implement the above.

As indicated above, a draft MOA containing measures to avoid, minimize, and resolve adverse effects to cultural resources within the OWEF's APE has been prepared and is included in Appendix R. The measures included in the draft MOA complement the mitigation measures presented and analyzed above and are designed to accomplish similar objectives. Below is a list of EIS/EIR mitigation measures that provide protection for cultural resources similar to those in the draft MOA:

- Avoidance and protection measures identified in Mitigation Measure CUL-2 (Avoid and protect potentially significant resources) are also included in draft MOA Sections III and IV, Appendix D: Historic Properties Treatment Plan, Item 6 (Site Protection During Project Construction) and will be incorporated into Appendix F.
- The management plan identified in Mitigation Measure CUL-3 (Develop and implement a Management Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects) is presented in draft MOA Section IV and will be incorporated into Appendix F.
- The Historic Properties Treatment Plan identified in Mitigation Measure CUL-4 (Develop an HPTP and conduct data recovery or other actions to resolve adverse effects) is presented in draft MOA Section III and Appendix D. Other components of Mitigation Measure CUL-4 will be incorporated in the draft MOA Appendix F.
- The construction monitoring requirements set forth in Mitigation Measure CUL-5 (Monitor construction at known ESAs) are reflected in draft MOA Sections IV.a, IV.b, and 2.2.1, and Appendix F, Section 2.2 (3).
- Training for construction personnel identified in Mitigation Measure CUL-6 (Train construction personnel) is identified in draft MOA Section III(b) and Appendix D.
- The requirements set forth in Mitigation Measure CUL-7 (Properly treat human remains) are identified in draft MOA Section IV and Appendix G.
- The continued consultation identified in Mitigation Measure CUL-9 (Continue consultation with Native American and other traditional groups) is reflected in the draft MOA Whereas Clauses, Section III.b and will be incorporated into Appendix F.
- The protection and monitoring requirements identified in Mitigation Measure CUL-10 (Protect and monitor NRHP-eligible and/or CRHR-eligible properties) are reflected in draft MOA Sections III.b and IV.a, and Appendices E and F at a later date.
- Requirements similar to those identified in Mitigation Measure CUL-11 (Control unauthorized access) are included in draft MOA Section IV and Appendix D (Item 6) and would be developed further in Appendix F.
- Requirements similar to those identified in Mitigation Measure CUL-12 (Funding of ranger and law enforcement patrols) are included in draft MOA Sections III, IV, Appendix D (Item 6) and will be included in Appendix F.

4.4.11 Residual Impacts After Mitigation

The proposed OWEF has been designed to avoid physical impacts to all known resources eligible for the NRHP. Although physical impacts would be avoided, the proposed OWEF could still have an adverse impact on the TCP. This impact could be reduced through the removal of wind turbines in the portions of the project site that have particular importance to tribes, such as the Spoke Wheel Geoglyph. A proposed concept for removing wind turbines for this purpose is the Refined Project discussed in Section 2.1.2, which would eliminate 43 turbines in the northwestern portion of the project site. Even with a modification such as this, some tribes have indicated that the project may still have an adverse effect on the TCP.

In addition, the potential remains for impacts to unknown resources that may be discovered at the project site during construction. Implementation of the mitigation measures presented above, particularly Mitigation Measures CUL-5, CUL-6, and CUL-8, will minimize the potential for adverse impacts to previously unknown resources.

Even with mitigation, non-physical project impacts to cultural resources would be adverse.

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible] Residual impacts after mitigation

[illegible]

4.5 Environmental Justice

4.5.1 Methodology for Analysis

In the analysis, the percentages of minority and low-income populations were examined for each jurisdiction. For purposes of consistency and in compliance with U.S. BLM guidelines, U.S. Census data is used to determine minority and low-income population percentages in the affected area. The unit of analysis of potential impact on minority populations and low-income populations is the census tract group. After an initial screening-level analysis of the project area to determine low-income and minority percentage areas a jurisdictional screening-level analysis is conducted. If the jurisdiction has a population of 50 percent or greater for either the low-income or minority categories, it is identified for more detailed analysis. Similarly, if the jurisdiction has a population meaningfully greater (50 percent or greater) than the minority or low-income population percentage in the general population of the jurisdiction, it is identified for more detailed analysis. Identification of an area which would be disproportionately affected by the project does not by itself constitute an environmental justice impact. Analysis of impacts for all disciplines is presented in Section 4 of this EIS/EIR for the Proposed Action and its alternatives.

An environmental justice impact resulting from the Proposed Action or its alternatives would occur if high-minority or low-income populations are disproportionately impacted, and there is an unavoidable adverse impact in other issue areas that directly affects the geographic block group. Where available, mitigation measures are presented in each section to ensure that impacts associated with construction and operation of the Proposed Action or its alternatives are minimized or avoided. A disproportionate environmental justice impact would occur, however, if an unavoidable adverse impact were to occur in an area identified as having the potential for a high-minority or low-income population.

4.5.2 CEQA Significance Criteria

CEQA does not does not require the analysis of environmental justice impacts and so does not provide specific significance criteria for environmental justice impacts. Consequently, no CEQA significance determinations have been made for the analysis of environmental justice impacts below.

4.5.3 Alternative 1: Proposed Action

4.5.3.1 Direct and Indirect Impacts

As shown in Table 3.18-1, Census Tract 123.01 Block Group 2 in Imperial County and Census Tract 210 Block Groups 3 and 4 in San Diego County all have minority populations of less than 50 percent and are lower than minority populations of Imperial and San Diego Counties, respectively. As such, no further analysis of the impacts on minority populations in these areas is necessary. The minority population in Census Tract 123.01 Block Group 1 in Imperial County, however, is more than 50 percent and therefore has been identified for more detailed analysis. Census Tract 123.01 Block Group 1 had a population of 5,369 according to the 2010 Census. Of this population, 4,311 were located in Census Block 1297 within this block group, Centinela State Prison, over 11 miles east of the OWEF site. Census Block 1297 also accounts for 71 percent of the Block Group's minority population. As Census Block 1500 would be outside the affected area of the Proposed Action, the minority population located here would not be affected by activities associated with construction, operation and maintenance activities, or decommissioning. Without Block 1500, the remainder of Census Tract 123.01 Block Group 1 would have a minority percentage of approximately 12 percent, well below that of the rest of Imperial County.

With regard to low-income populations, as shown in Table 3.18-1, Census Tract 123.01 and Ocotillo in Imperial County both have low-income populations of less than 50 percent and, in the case of Census Tract 123.01, lower than Imperial County as a whole. While Ocotillo's low-income population is greater than that of Imperial County, it is not 50 percent greater. Consequently, no further analysis is required for Ocotillo and Census Tract 123.01. Census Tract 210 in San Diego County is less than the San Diego County average of 15 percent. In the case of both of these Census Tracts, population centers are more than 15 miles northwest of the affected area and there are no residents living in the Census Tracts within one-half mile of the proposed OWEF site. Consequently, no low-income populations would be affected by activities associated with construction, operation and maintenance, or decommissioning.

4.5.3.2 CEQA Significance Determinations

Because environmental justice relates to social and economic effects, CEQA does not require significance determinations for these types of impacts.

4.5.4 Alternative 2: 137 Wind Turbine Generators

4.5.4.1 Direct and Indirect Impacts

While Alternative 2 would install fewer WTGs than the Proposed Action, the project boundaries for Alternative 2 would remain the same as described for the Proposed Action. Consequently, the same Census Blocks and Census Block Groups would be affected by Alternative 2 as for the Proposed Action and populations in those Census Blocks and Census Block Groups would be affected in the same way. No populations with a minority percentage or low-income percentage of greater than 50 percent would be within one-half mile of Alternative 2.

4.5.4.2 CEQA Significance Determinations

Because environmental justice relates to social and economic effects, CEQA does not require significance determinations for these types of impacts.

4.5.5 Alternative 3: 105 Wind Turbine Generators

4.5.5.1 Direct and Indirect Impacts

While Alternative 3 would also install fewer WTGs than the Proposed Action, the project boundaries for Alternative 3 would remain the same as described for the Proposed Action. Consequently, the same Census Blocks and Census Block Groups would be affected by Alternative 2 as for the Proposed Action and populations in those Census Blocks and Census Block Groups would be affected in the same way. No populations with a minority percentage or low-income percentage of greater than 50 percent would be within one-half mile of Alternative 3.

4.5.5.2 CEQA Significance Determinations

Because environmental justice relates to social and economic effects, CEQA does not require significance determinations for these types of impacts.

4.5.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.5.6.1 Direct and Indirect Impacts

Under Alternative 4, no action would occur and existing conditions relevant to minority and low-income populations would continue. No impact associated with the proposed OWEF would occur.

4.5.6.2 CEQA Significance Determinations

Because environmental justice relates to social and economic effects, CEQA does not require significance determinations for these types of impacts.

4.5.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.5.7.1 Direct and Indirect Impacts

Under Alternative 5, no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to minority and low-income populations would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur.

4.5.7.2 CEQA Significance Determinations

Because environmental justice relates to social and economic effects, CEQA does not require significance determinations for these types of impacts.

4.5.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.5.8.1 Direct and Indirect Impacts

Under Alternative 6, no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, similar impacts to minority and low-income populations as those described for the proposed OWEF could occur.

4.5.8.2 CEQA Significance Determinations

Because environmental justice relates to social and economic effects, CEQA does not require significance determinations for these types of impacts.

4.5.9 Cumulative Impacts

4.5.9.1 Geographic Extent/Context

As described in Section 3.18, the affected area for environmental justice impacts would be jurisdictions within one-half mile of the Proposed Action or its alternatives to identify project-specific, localized impacts. Similarly, for environmental justice impacts associated with the Proposed Action or its alternatives to combine with those of other projects, the environmental justice impacts of the other projects would have to overlap the affected area of the Proposed Action or its alternatives. Assuming that other projects would also result in environmental justice impacts within one-half mile of the project area, to overlap with the Proposed Action's affected area, these other projects would need to be within one mile of the Proposed Action. Additionally, as any environmental justice impacts generated by the proposed OWEF would be limited to occurring within the lifespan of the project, cumulative environmental justice impacts would also occur only during the lifespan of the project.

4.5.9.2 Existing Cumulative Conditions

This section discusses the past projects that have occurred in the cumulative analysis area described above, in addition to ongoing projects in the area. As the cumulative analysis area for environmental justice impacts is within one-half mile of the project area, past and present development contributing to the cumulative conditions for environmental justice in the cumulative analysis area is limited to development in the communities of Ocotillo and Nomirage. As described in Section 3.18 and above, the minority and low-income populations within the affected area would be less than 50 percent and would be lower than their respective overall populations in Imperial and San Diego Counties.

4.5.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider to be reasonably foreseeable.

Of the cumulative projects listed in Table 4.1-1, the following list provides a summary of foreseeable projects in the cumulative effects area for environmental justice:

- **Sunrise Powerlink.** This is a 150-mile transmission line route from SDG&E's Imperial Valley Substation near El Centro to SDG&E's Peñasquitos Substation near Interstate 805, in coastal San Diego. Construction would affect a large number of populations over its 150-mile route through San Diego and Imperial Counties, including a variety of high-minority and low-income areas. Stringing activities associated with Sunrise Powerlink in the Ocotillo area may overlap the timeframe for construction of the proposed OWEF. In the vicinity of the OWEF, however, no high-minority or low-income areas would be traversed by the Sunrise Powerlink.
- **Coyote Wells.** The Wind Zero Group, Inc. has proposed to construct this residential development, per a Specific Plan which describes 22 parcels and 10 land use designations. Construction of Phase I of Coyote Wells would overlap with construction of the proposed OWEF. Phase III of the Coyote Wells Specific Plan would include 32 townhomes and 28 garage lofts which would be utilized by visitors, but would not have permanent residents. Phase III also includes three single-family residences resulting in approximately nine new residents.

- **Renewergy.** Renewergy LLC is planning to conduct wind testing with meteorological towers immediately east of the OWEF site. While Renewergy could result in similar impacts as the proposed OWEF, it is similarly unlikely to affect high-minority or low-income areas.

Most of the projects presented in Table 4.1-1 and described above have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not yet been completed for projects determined to be located within the geographic extent of this cumulative analysis, the potential effects of all projects comprising the existing and reasonably foreseeable cumulative conditions relevant to the proposed OWEF were considered in the cumulative impacts analyses in this EIS/EIR. The Final EIR/EIS for the Sunrise Powerlink was completed in 2008 and the Coyote Wells Specific Plan Final EIR was published in July 2010.

4.5.9.4 Construction, Operation and Maintenance, Decommissioning

The environmental justice analysis for the Sunrise Powerlink identified no high-minority or low-income populations within one-half mile of the project's transmission ROW in Imperial County. While no environmental justice analysis was performed for the Coyote Wells Specific Plan EIR, where the specific plan would overlap with the Proposed Action, no high-minority of low-income populations would be affected and the influx of up to nine new permanent residents would not shift the demographics of the area in a manner that would result in effects on a high-minority or low-income population. No environmental analysis has been performed for the Renewergy project at this time. As the minority and low-income populations within one-half mile of the Proposed Action or its alternatives would be less than 50 percent and lower than the respective overall populations in Imperial and San Diego Counties, and no impacts to high-minority and low-income populations would occur as a result of the Sunrise Powerlink and Coyote Wells Specific Plan, impacts associated with construction, operation and maintenance, or decommissioning would not result in disproportionate adverse effects on minority or low-income populations and the project/alternatives will not contribute to cumulative impacts.

4.5.9.5 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for environmental justice; therefore, no significance determination has been made.

4.5.10 Mitigation Measures

Given the absence of environmental justice impacts, no mitigation measures are proposed.

4.5.11 Residual Impacts After Mitigation

No unavoidable adverse impacts related to environmental justice would occur.

4.6 Lands and Realty

4.6.1 Methodology for Analysis

This section discusses the lands and realty impacts that would occur with implementation of the Proposed Action or alternatives. Potential land and realty effects may occur from conflicts with existing or authorized land uses or conflicts with applicable land use plans, policies, or regulations. Impacts/effects associated with other existing land use activities are discussed in separate sections of Chapters 3 and 4, and are as follows: Livestock Grazing (Section 3.7); Multiple Use Classes (Sections 3.9 and 4.8); Mineral Resources (Sections 3.8 and 4.7); Recreation (Sections 3.13 and 4.12); and Wild Horses and Burros (Section 3.21).

On February 3, 2012, the Applicant submitted a letter to Imperial County indicating that it would no longer be seeking approval for the single wind turbine located on private property. Because this was the only proposed turbine location not located on BLM-administered land, it was the only location that required approval only from Imperial County. Without this turbine location, the project no longer requires a General Plan amendment or zone change to be approved by Imperial County. The Final EIS/EIR has been revised to reflect the fact that a General Plan amendment and zone change are no longer required. For most issue areas, the impact analysis still includes the turbine on private property; however, revisions have been made to the impacts associated with Lands and Realty regarding compliance with the County's land use documents.

4.6.2 CEQA Significance Criteria

The significance criteria for land use and planning listed below were used to determine if the proposed OWEF would result in impacts to land use and realty, and were derived from the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines.

L&R-1 *Physically divide an established community;*

L&R-2 *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or*

L&R-3 *Conflict with any applicable habitat conservation plan or natural community conservation plan.*

Of these criteria the following were determined to be inapplicable or to result in no impact under all alternatives and, therefore, these criteria are not discussed further in this section:

L&R-1: The proposed OWEF would be adjacent to the rural communities of Ocotillo and Nomirage. The property boundary of the closest non-residential sensitive receptor (Ocotillo Community Park) is located approximately 9,000 feet (1.7 miles) away. Therefore, the Proposed Action would not physically divide an established community 1.

L&R-3: The OWEF site would not be located within the boundaries of an existing habitat conservation plan or natural community conservation plan; therefore, there would be no impact under the L&R-3 criterion.

4.6.3 Alternative 1: Proposed Action

The following provides consistency determinations for land use plans, policies, and regulations that are applicable to Alternative 1, the Proposed Action:

Federal Land Policy and Management Act (FLPMA) of 1976

The FLPMA provides the authority to issue a ROW authorization to construct, operate, maintain, and decommission a wind energy project, including a substation; administration, operations and maintenance facilities; transmission lines; and temporary construction lay down areas. Therefore, electrical generation facilities are an allowable land use under FLPMA, and with issuance of the ROW grant, the Proposed Action would be in compliance with the FLPMA.

California Desert Conservation Area Plan

The majority of the project site is within the Multiple Use Class (MUC), Limited Use (L), under the BLM's CDCA Plan. As explained in Sections 3.9 and 4.8, MUC-L allows for low to moderate recreation activities, including non-competitive vehicle touring and events on approved routes of travel. Wind energy is also an allowable use–after NEPA requirements are met. This EIS will act as the mechanism for complying with those NEPA requirements. However, Chapter 3, "Energy Production and Utility Corridors Element" of the CDCA Plan also requires that newly proposed power facilities that are not already identified in the CDCA Plan be considered through the plan amendment process. The proposed OWEF site is not currently identified in the CDCA Plan and, therefore, a plan amendment is required to include the facility as a recognized element within the CDCA Plan. As a result, as part of its evaluation of the issuance of a ROW grant for the Proposed Action, the BLM is also considering amending the CDCA Plan to identify the OWEF. With such an amendment, the Proposed Action would be in compliance with the CDCA Plan.

Western Colorado (WECO) Routes of Travel Plan

As discussed in Section 3.13 (Recreation), approximately 27 OHV routes designated by the WECO Plan are located within the Proposed OWEF site, and construction of the Proposed Action would conflict with the routes established by this plan. However, interference with these routes would be temporary, as the routes would be available for OHV use upon completion of construction. In addition, there are several large recreation areas in the project vicinity where recreationalists could visit instead of the project site, including the Jacumba Wilderness, Yuha Basin, Coyote Mountains, and Table Mountains which are in the immediate vicinity of the project site and consist of thousands of acres of land available for camping, hunting, and hiking. Additionally, OHV use is allowed at the Yuha Basin and the Plaster City Open Area, which are both within ten miles of the project site and would not be effected by construction activities.

Imperial County General Plan Land Use Element

The goals and objectives that are applicable to the Proposed Action are listed in Section 3.6. In summary, Goal 3 aims to achieve balanced economic and residential growth along with the preservation of natural resources. The Proposed Action would contribute to economic growth in the County and preservation efforts would be implemented through the mitigation measures set forth in this EIS/EIR and with the Applicant's proposed BMPs. This Plan also includes an objective to coordinate with the BLM and the CDCA Plan, as discussed in the consistency analysis above, the Proposed Action includes a ROW grant and CDCA Plan Amendment, and with approval of both actions the project would be consistent with the CDCA Plan.

Goal 4 of this element aims to preserve and enhance desert towns and newer communities, and includes objectives to maintain land uses compatible with existing communities and requires buffers when non-residential uses are proposed. The Proposed Action would not physically divide an established community and the wind turbines have been sited to maintain buffers from the communities of Ocotillo and Nomirage. The closest property boundary of a sensitive receptor, Ocotillo Community Park, is located approximately 9,000 feet (1.7 miles) away from the project site. In addition, the Proposed Action would not result in long-term conflicts with existing land uses since recreation activities would be allowed on the project site during the operation period.

Goal 6 of this element promotes orderly industrial development, and Goal 8 of this element promotes coordination between the local land use activities with State and federal agencies. The applicable objectives are to allow the siting of public ROWs when necessary and to also ensure that the siting of utility facilities is compatible with the environment and County regulations. As an EIR/EIS, this document aims to address potential impacts that would affect federal, State, and local lands and agencies, ensure orderly development, and also evaluate compliance with all applicable regulations. The Proposed Action includes a ROW grant and CDCA Plan Amendment, and with approval of both actions, the project would be consistent with the CDCA Plan. In addition, the Conditional Use Permit (CUP) and variance required by the County would ensure orderly development and compliance with County regulations.

Imperial County General Plan, Conservation and Open Space Element

Goal 6 of this element aims to achieve conservation practices while also developing renewable energy generation facilities. This goal also includes an objective to encourage compatibility with national and State energy goals as well as community general plans. The Proposed Action would include preservation efforts through the implementation of mitigation measures set forth in this EIS/EIR and with the Applicant's proposed BMPs. In addition, the Proposed Action would coincide with the County's goal of developing alternative energy resources, as well as contributing to fulfillment of the goals of the Energy Policy Act (EPAct 05) and the State's Renewable Portfolio Standard (RPS). Therefore, the proposed project would achieve the County's goal and objective associated with renewable energy development.

Ocotillo/Nomirage Community Area Plan

The entire project site is within the boundaries of this area plan; however, the project site is under BLM jurisdiction, which supersedes Imperial County's plans. Therefore, the applicable land use designations are the Multiple Use Classifications identified in the CDCA Plan.

Imperial County Land Use Ordinance, Title 9, Division 5

As discussed in Section 1 (Introduction), in order to be in compliance with the County's Land Use Ordinance, the Proposed Action requires discretionary approvals from the County including a CUP and a variance for structure height. Pursuant to an agreement between the County and the BLM, the CUP covers the entire project except the SDG&E Sunrise Powerlink 500-kV Transmission Line, the Project Substation, the Utility Switchyard, and the SDG&E Staging and Storage Areas. As shown in Figure 3.6-3b, Site 2 of the Proposed Action is within the County's G/S zone of the County's Land Use Ordinance. This area is subject to the County's CUP, and is also within the jurisdiction of the BLM; therefore, the

MUC-L designation from the BLM's CDCA Plan supersedes the County's designation, and land use developments in this area must comply with the CDCA Plan.

4.6.3.1 Direct and Indirect Impacts

Construction

As discussed in Section 3.13, the proposed OWEF site is currently used for recreation activities including camping, off-highway vehicle (OHV) use, and shooting. Construction of the Proposed Action would temporarily interfere with existing recreational activities since access to the OWEF site and OHV routes would be restricted during construction. However, after the construction period, access to the site and OHV routes would be restored, so impacts would be temporary. Refer to Section 4.12, Recreation, for a full discussion of impacts associated with recreational resources. Similarly, potential conflicts with surrounding mining operations and the Emory Airport would be temporary during the construction period (refer to the Sections 4.9, Noise, and 4.11, Public Health and Safety, for impacts associated with the Emory Airport).

Nonetheless, Mitigation Measure Lands-1 requires the Applicant to notify property owners of all major construction milestones so that they are informed as to the time and location of potential disturbances, and Mitigation Measure Lands-2 requires the Applicant to minimize the disturbance of existing land uses through coordination with the owners.

Operation and Maintenance

As discussed in Section 3.16, the proposed OWEF site is currently used for recreation activities including camping, off-highway vehicle (OHV) use, and shooting. Construction of the Proposed Action would temporarily interfere with existing recreational activities; however, during the operation period, access to the site and OHV routes would be restored. Refer to Section 4.12, Recreation, for a full discussion of impacts associated with recreational resources.

The CDCA Designated Utility Corridor N and the Section 368 Utility Corridor 115-238 have been designed and designated to foster development of renewable resources, including the proposed OWEF. In addition, the existing and approved utilities in the project area include a transmission line, a telecommunication line, railways, and State and County roads. Corridor Conflict Analysis (CCA) was prepared to determine the compatibility of the Proposed Action with existing BLM utility corridors and consider potential conflicts with the existing and approved utility corridors. The first part of the analysis compared the land requirements of the Proposed Action with the existing/proposed utility projects, which found that there is a substantial amount of land available for future use. The second part of the study considered routing constraints for utilities like electrical lines and roadways. From a routing standpoint, there is a potential for spatial constraints within the two designated corridors as a result of the Proposed Action and the 481-foot setback distances from the WTGs. If these buffers are considered, they could limit options for routing of future overhead/aboveground facilities within the corridor. As such, the CCA includes the following suggestions to address the constraints within the corridors: revise the orientation of turbines to allow for linear corridors; spread out some of the turbines so they are greater than 1,100 feet apart; remove certain turbines to allow for linear corridors; and create additional, extended, or revised utility corridor(s) (Burns & McDonnell, 2010).

In response to the CCA, the Applicant revised the layout of the wind turbines to provide space for future linear utility alignments adjacent to the existing Southwest Powerlink and the Sunrise Powerlink transmission lines. The revised layout moves the wind turbines farther away from the transmission lines and provides adequate space to allow for additional utility alignments through the project site and, therefore, does not conflict with CDCA Designated Utility Corridor N.

Decommissioning

As mentioned above under "Construction," the proposed OWEF site is currently used for recreational purposes. Decommissioning activities would cause temporary, indirect disturbances to users of the recreation areas similar to those described under "Construction" above. Also, refer to Section 4.12, Recreation, for a full discussion of impacts associated with recreational resources. However, after the Proposed Action has been decommissioned, recreation users would experience a beneficial impact, as the site would return to its natural undeveloped state. Decommissioning would require coordination similar to that performed during construction where the Proposed Action would overlap existing uses (including roads and transmission lines). Mitigation Measure Lands-3 requires that the decommissioning plan include notification of decommissioning activities to the surrounding landowners. In addition, land use plans, policies, or regulations may have changed by the time Proposed Action would be decommissioned. As such, the decommissioning plan shall ensure that decommissioning is conducted in accordance with then-current land use plans, policies, or regulations.

4.6.3.2 CEQA Significance Determinations

Construction

- **L&R-2.** With the approval of a ROW grant and plan amendment, construction of the Proposed Action would not conflict with the FLPMA and the CDCA Plan. However, there would be a conflict with the WECO Plan since the project site (including routes designated by the WECO Plan) would be inaccessible to recreation users during the construction period. Access to the routes would be restored after the completion of construction. As such, this conflict with the WECO Plan would be temporary, and less than significant.

  In addition, with approval of the CUP and variance, the Proposed Action would not conflict with the County's land use plans and zoning ordinance.

Operation and Maintenance

- **L&R-2.** Conflicts with the applicable plans, policies, and regulations would be the same as discussed under "Construction," with the exception of the WECO Plan. During operation and maintenance of the Proposed Action, access to the site would be available for recreation activities, including OHV use. Therefore, the Proposed Action would not conflict with the WECO Plan during the operation and maintenance period.

Decommissioning

- **L&R-2.** Land use plans, policies, or regulations may have changed by the time the proposed OWEF would be decommissioned. As such, Mitigation Measure Lands-3 requires that the decommissioning plan shall ensure that decommissioning is conducted in accordance with then-current land use plans, policies, or regulations. With implementation of this measure, the decommissioning of the OWEF would not conflict with applicable plans, policies, or regulations, and impacts would be less than significant.

4.6.4 Alternative 2: 137 Wind Turbine Generators

4.6.4.1 Direct and Indirect Impacts

Alternative 2 is conceptually similar to the Proposed Action (Alternative 1), but with 21 fewer WTGs (137 total). Compared to the OWEF, the turbines eliminated under this alternative include some in the southern portion of Site 2 and northeast portion of Site 1, and several along the perimeter of the project in the northwest portion of Site 1. Conflicts with applicable plans, policies, and regulations would be the same as discussed under Alternative 1.

Construction

During construction of this alternative, potential impacts to lands and realty would be the same as described under "Construction" for Alternative 1. Although a smaller number of turbines would be constructed, temporary effects would still be experienced. However, since construction of Alternative 2 would be completed in a single phase the duration of those impacts would occur over a shorter period of time as compared to Alternative 1. In addition, Mitigation Measures Lands-1 through Lands-3 would be required.

Operation and Maintenance

During the operation and maintenance period for this alternative, potential impacts to lands and realty would be the same as described under "Operation and Maintenance" for Alternative 1.

Decommissioning

During the decommissioning of this alternative, potential impacts to lands and realty would be the same as described under "Decommissioning" for Alternative 1.

4.6.4.2 CEQA Significance Determinations

- **L&R-2.** The CEQA significance determinations of lands and realty for Alternative 2 would be identical to Alternative 1.

4.6.5 Alternative 3: 105 Wind Turbine Generators

4.6.5.1 Direct and Indirect Impacts

Alternative 3 is conceptually similar to the Proposed Action (Alternative 1), but with fewer WTGs.

Conflicts with applicable plans, policies, and regulations would be the same as discussed under Alternative 1, and Mitigation Measures Lands-1 through Lands-3 would be required.

Construction

During construction of this alternative, potential impacts to lands and realty would be the same as described under "Construction" for the Proposed Action. Although a smaller number of turbines would be constructed, temporary effects would still be experienced. However, since construction of Alternative 3 would be completed in a single phase the duration of those impacts would occur over a shorter period of time as compared to Alternative 1.

Operation and Maintenance

During the operation period of this alternative, potential impacts to lands and realty would be the same as described under "Operation and Maintenance" for Alternative 1.

Decommissioning

During the decommissioning of this alternative, potential impacts to lands and realty would be the same as described under "Decommissioning" for Alternative 1.

4.6.5.2 CEQA Significance Determinations

- **L&R-2.** The CEQA significance determinations of lands and realty impacts for Alternative 3 would be identical to Alternative 1.

4.6.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.6.6.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would not amend the CDCA Plan. As a result, no wind energy project would be constructed, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because there would be no amendment to the CDCA Plan and no wind project approved for the site under this alternative, no new structures or facilities would be constructed or operated on the site and no new ground disturbance would occur. As a result, none of the impacts to lands and realty from construction or operation of the project would occur.

4.6.6.2 CEQA Significance Determinations

There would be no lands and realty impacts under Alternative 4.

4.6.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.6.7.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the site, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would remain in its existing condition unless another use is designated in this amendment. As a result, access to the site would not change and existing land uses would continue without any disruptions from construction of wind energy facilities. As such, this No Action Alternative would have no adverse impact on lands and realty within and adjacent to the site in the long term, and future wind development is unlikely as the plan would be amended to identify the site as unsuitable for wind development.

4.6.7.2 CEQA Significance Determinations

There would be no lands and realty impacts under Alternative 5.

4.6.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.6.8.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF, but would amend the CDCA Plan to allow for other wind projects on the site. As a result, it is possible that another wind energy project could be constructed on the site. If this were to occur, it is likely that construction and operation impacts to lands and realty would be similar to the impacts from the proposed OWEF.

4.6.8.2 CEQA Significance Determinations

With construction and operation of another wind energy development, the CEQA significance determinations for lands and realty impacts under Alternative 6 would be the same as Alternative 1.

4.6.9 Cumulative Impacts

4.6.9.1 Geographic Extent/Context

The geographic scope for the analysis of cumulative impacts related to lands and realty are the local and regional communities and sensitive receptors. Cumulative impacts to lands and realty could result from the physical division of an established community, or from conflicts with any applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental impacts. Therefore, this analysis includes the renewable energy projects within Imperial County and southeastern San Diego County, which may incur similar impacts to the existing on-site land uses and the surrounding communities, and would also have to undergo a similar consistency analysis for plans, policies, and regulations as the proposed OWEF.

4.6.9.2 Existing Cumulative Conditions

Past and present projects occurring in the vicinity of the proposed OWEF site include recreational activities, mining, and quarry activities in Plaster City.

4.6.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Table 4.1-2 summarizes the cumulative projects that would have potential to combine the Proposed Action and result in cumulative impacts to lands and realty. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-2, their effects were considered in the cumulative impacts analyses in this EIS/EIR.

Proposed projects in the vicinity of the proposed OWEF that would have potentially adverse impacts to lands and realty include the SDG&E Photovoltaic Solar Field (total acreage is unknown) directly north of the projects site; a wind testing site adjacent to the east end of the project site (3,912 acres); the Coyote Wells Specific Plan; the Sunrise Powerlink; five solar energy development projects east of the OWEF site and (a total of approximately 12,000 acres); two wind testing sites (a total of approximately 6,600 acres); and three wind energy project (acreage is not available) in the southeastern portion of the San Diego County. In addition, there are 15 renewable energy projects northeast of the project site surrounding the city of Calipatria. Table 4.1-1, presented in Section 4.1 of this EIS/EIR, lists the cumulative projects in the vicinity of the proposed OWEF site and surrounding area. Of the cumulative projects listed in Table 4.1-1 and identified on Figure 4.1-1a, the following is a list and summary of projects which comprise the cumulative conditions for lands and realty:

- SDG&E Proposed PV Solar Field
- Renewergy, LLC (wind testing)
- Coyote Wells Specific Plan
- Sunrise Powerlink
- Campo Wind Energy Project
- Manzanita Wind Energy Project
- Jordan Wind Energy Project
- Debenham Energy (wind testing site)
- National Quarries (wind testing site)
- Imperial Valley Solar (solar energy)
- Imperial Solar Energy Center West (solar energy)
- Imperial Solar Energy Center South (solar energy)
- Geothermal Overlay (geothermal energy)
- Hudson Ranch II (solar energy)
- Mount Signal Solar Farm (solar energy)
- Centinela Solar (solar energy)
- Superstition Solar 1 (solar energy)
- Energy Source Solar II (solar energy)
- Salton Sea Solar Farm I (solar energy)
- Salton Sea Solar Farm II (solar energy)
- Calipat Solar Farm I (solar energy)
- Calipat Solar Farm II (solar energy)
- Midway Solar Farm I (solar energy)
- Midway Solar Farm II (solar energy)
- Chocolate Mountain (solar energy)
- Black Rock Unit #123 (geothermal energy)
- IV Solar Company (solar energy)
- Hudson Ranch II (geothermal energy)
- Frink Road Solar Power (solar energy)

4.6.9.4 Construction

The proposed developments near the project site that would have the potential to induce cumulative impacts include thousands of acres of renewable energy generation projects that would have the potential to conflict with existing land uses. It is expected that some of the cumulative projects described above may be under construction the same time as the Proposed Action. In particular, tower erection for the

Sunrise Powerlink in the vicinity of Ocotillo was completed at the end of 2011, but stringing activities will continue into 2012; and construction of the Imperial Solar Center West and South projects is expected to begin in September 2011 and last for 17 months. Construction dates for the Imperial Valley Solar Project, the SDG&E Proposed Photovoltaic Solar Field, and the Renewergy wind testing site are unknown; however, considering that these projects are reasonably foreseeable, the assumption is that construction periods could overlap with the proposed OWEF. As a result, there may be short-term impacts during construction of those cumulative projects related to lands and realty. However, in consideration of cumulative land use compatibility impacts, the implementation of renewable projects in southern California would occur mostly in undeveloped desert lands or areas of rural development (refer to Sections 4.7, 4.6, 4.12, and 4.15 for cumulative impacts associated with mineral resources, MUCs, and recreational resources, and lands under special designations, respectively), and would not create physical divisions of established residential communities. In addition, after construction the project site would be restored to pre-project conditions and there would be no conflicts with applicable plans, policies, and regulations.

4.6.9.5 Operation and Maintenance

It is expected that some of the cumulative projects described above may be operational at the same time as the Proposed Action. As a result, there may be long-term impacts during operation of those cumulative projects related to lands and realty, which may include interference with existing land uses, the conversion of existing land uses to a new land use, and/or restricted access to the cumulative project sites.

The conversion of these lands would permanently preclude numerous existing land uses including recreation, wilderness, rangeland, and open space. However, because existing land uses would be allowed during the operation period and, with approval of the County CUP and variance, there would not be conflicts with applicable plans, policies, and regulations, the Proposed Action would not contribute to cumulative impacts.

4.6.9.6 Decommissioning

The decommissioning of the Proposed Action is expected to result in adverse impacts similar to construction impacts. Disruptions from the decommissioning of other renewable energy projects would have the potential to combine with the decommissioning activities associated with the Proposed Action, which would result in a cumulative impact. Therefore, the Proposed Action's contribution to cumulative impacts to lands and realty would be temporary due to nature of decommissioning activities and the proposed OWEF site would be returned to the current state.

4.6.9.7 CEQA Significance Determinations

- **L&R-2.** After the construction and decommissioning periods, the project site would be restored to pre-project conditions and there would be no conflicts with applicable plans, policies, and regulations. During the operation and maintenance period, with approval of the County CUP and variance, there would not be conflicts with applicable plans, policies, and regulations. Therefore, the proposed project's incremental contribution to cumulative impacts on lands and realty would not be significant.

4.6.10 Mitigation Measures

Lands-1 Notify the communities of Ocotillo and Nomirage of all major project construction milestones, such as the start of project construction. Property owners within 1,000 feet of the project shall be provided with a detailed construction schedule at least 30 days before construction so that they are informed as to the time and location of disturbance. Updates shall be provided as necessary.

Lands-2 The project shall be designed to minimize disturbance or modification of existing uses. If disturbance or modification of existing uses were necessary, the Applicant shall coordinate with the owners to determine an acceptable solution. Any such solutions/agreements shall be prepared in writing and submitted to the BLM and County.

Lands-3 The decommissioning plan shall include notification of property owners of all major decommissioning milestones, such as the start of decommissioning activities. Said property owners shall be provided with a detailed decommissioning schedule at least 30 days prior to decommissioning so that they are informed as to the time and location of disturbance. Updates shall be provided as necessary. In addition, the decommissioning plan shall ensure compliance with all applicable federal, State, and local plans, policies, and regulations at the time of decommissioning.

Mitigation Measures Lands-1 and Lands-2 would substantially reduce potential disruptions to existing land uses by requiring notification and coordination with property owners. Mitigation Measure Lands-3 would require that a decommissioning plan is provided prior to the decommissioning of the Proposed Action. This plan would ensure that decommissioning is conducted in accordance with then-current land use plans, policies, or regulations.

Implementation of these mitigation measures would not disturb or disrupt the natural environment. Therefore, their implementation would not result in adverse impacts.

4.6.11 Residual Impacts After Mitigation

There would be no adverse unavoidable impact to lands and realty as a result of construction, operation and maintenance, or decommissioning of the Proposed Action.

4.7 Mineral Resources

4.7.1 Methodology for Analysis

This section describes effects on mineral resources that would be caused by implementation of the proposed OWEF, or "Proposed Action", and alternatives. The following discussion addresses potential environmental impacts associated with construction, operation, and decommissioning of the proposed OWEF and alternatives. A discussion of cumulative impacts related to mineral resources is also included in this section.

Baseline conditions for the environmental setting relevant to mineral resources are presented in Section 3.8 of this EIS/EIR. Construction activities, operation and maintenance activities, and decommissioning of the Proposed Action and/or an alternative to the Proposed Action were evaluated based on their potential to affect the baseline conditions. Construction, operation, and maintenance activities were identified based on analysis provided in the Applicant's Plan of Development (OE, 2010), as discussed in Chapter 2 of this EIS/EIR.

4.7.2 CEQA Significance Criteria

The indicators listed below were used to determine if the proposed OWEF would result in impacts to mineral resources. These indicators are the same as the significance criteria listed for Mineral Resources in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines.

MR-1 *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State;*

MR-2 *Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.*

The indicators above were also used as criteria for determining the significance of impacts under CEQA.

4.7.3 Alternative 1: Proposed Action

4.7.3.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for the Proposed Action is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

The Plan of Development for the proposed OWEF indicates that no oil, gas, or geothermal fields are located in the vicinity of the project site; however, approximately one to ten active mineral claims have been made at the project site (OE, 2010). The Mineral Resources Data System (MRDS), administered by the U.S. Geological Survey (USGS), indicates that there are numerous closed and current mineral resources and operations in the vicinity of the proposed OWEF site, as well as one active mining site within the OWEF site, and that most of these occurrences are characterized as "Sand and Gravel, Construction" (see Table 3.8-1).

Construction

Section 2.1.3.2.4 (Gravel, Aggregate, Concrete Needs and Sources) of this EIS/EIR describes that appropriate sources of sand and gravel in proximity to the proposed OWEF site would be identified by a construction contractor and permitted through the BLM, and would include up to three 15-acre locations within or near the proposed OWEF site. Sand and gravel resources are common in the proposed OWEF area, and use of these resources in construction of the proposed OWEF would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site. Implementation of the project may restrict or preclude access to salable or potentially salable mineral resources within the OWEF project boundaries; however, the common occurrence of these resources throughout Imperial County would lessen the extent of this potential impact of the project.

The Federal Register published on April 26, 2011, (Vol. 76, No. 80) included notice that segregates lands from mineral exploration for wind and solar applications, such as the proposed OWEF or an alternative. As described in this notice, the BLM has issued an interim temporary final rule (Interim Rule) to amend the BLM's regulations in 43 CFR parts 2090 and 2800 such that the BLM may temporarily segregate from the operation of the public land laws, public lands included in a pending or future wind or solar energy generation ROW application, for a period of up to two years. Management of public lands for multiple purposes (such as mining and renewable energy) can be problematic, such as where a mining claim is located within a proposed ROW for a renewable power facility, which could impede the BLM's ability to process the ROW application because the federal government's use of surface lands cannot endanger or materially interfere with a properly located mining claim. The Interim Rule would provide the BLM with a tool to minimize potential resource conflicts between ROWs for proposed solar and wind energy generation facilities and other uses of the public lands, including mining claims. (Federal Register, 2011)

The BLM estimates that 109 new mining claims located within wind energy ROW application areas in Arizona, California, Idaho, Nevada, Oregon, Utah, and Wyoming would be segregated under the Interim Rule, although the actual number of claimants affected will likely be less than this estimate because a single claimant typically files and holds multiple mining claims (Federal Register, 2011). The BLM further estimates, based on claimants in previous fiscal years, that approximately 14 entities would be affected by the segregation authorized per this Interim Rule (Federal Register, 2011). With respect to the purpose of this EIS/EIR, it is not development of the proposed OWEF or an alternative that would temporarily segregate mining claims and wind ROW applications; it is the BLM's effort to effectively manage public lands towards the purposes of multiple uses, where applicable, and to minimize conflicts between such uses to the maximum extent practicable. As described by the Interim Rule, segregation between mining claims and renewable energy applications would be temporary (up to two years) and of a duration that is considered reasonable to allow for processing of renewable energy applications on public lands. Once a ROW has been authorized, subsequently located mining claims would be subject to the previously authorized use, and any future mining claimant would have notice of such use (Federal Register, 2011).

Development of the proposed OWEF site would not interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources.

Operation and Maintenance

Operation and maintenance activities would include the upkeep of internal access roads, and new gravel may be occasionally applied to ensure the integrity of road surfaces. It is anticipated that the same gravel source(s) used for construction of the proposed OWEF would be used during the operation and maintenance phase. As described above, the source(s) of gravel during construction would be identified by a construction contractor and permitted through the BLM, and would include up to three 15-acre locations within or near the OWEF site. As such, during the lifetime of the project, gravel resources may be extracted within the OWEF site and transported to the necessary on-site locations; gravel during operations may also be extracted from off-site locations and transported to the OWEF site as needed. The quantity of aggregate needed for operation and maintenance of the proposed OWEF would be far less than that needed for construction, and would not place pressure on the supply of these minerals. Sand and gravel resources are common in the proposed OWEF area, and use of these resources for operation and maintenance of the proposed OWEF would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site. The project may restrict or preclude access to salable resources within the OWEF project boundaries; however, the common occurrence of these resources throughout Imperial County would lessen the extent of this potential impact. As described under the discussion of construction-related impacts to mineral resources, development of the proposed OWEF site would not interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources.

The BLM is charged with managing public lands under BLM jurisdiction including as related to renewable energy developments, and as related to multiple uses defined by the Federal Land Policy and Management Act of 1976 (FLPMA), including for mining development (Federal Register, 2011). Per the Interim Rule described above and published in the Federal Register, the BLM has authority to segregate mining claims within corridors proposed for renewable energy development for up to two years, in order to allow efficient management of the public lands and avoid conflicts between multiple land uses. BLM is responsible for processing mining claims on public lands subject to BLM jurisdiction. Development of the proposed OWEF would not alter the jurisdiction or authority of the BLM; as with existing conditions, mining claims and mineral explorations on public lands within BLM jurisdiction would be subject to the authority of the BLM. Operation and maintenance of the Proposed Action would not permanently preclude the availability for exploration, extraction, and transport of any mineral resources.

Decommissioning

Decommissioning of the proposed OWEF would not require a source of mineral resources such as sand and gravel, and would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site.

4.7.3.2 CEQA Significance Determinations

As described above, the proposed OWEF would require a source of sand and gravel during the construction and operation/maintenance phases, but development of the proposed OWEF site would not interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources. As described above, development of the proposed OWEF does not alter BLM's jurisdiction or authority as related to mineral claims and explorations, and the potential for future explorations for mineral resources to occur on the proposed OWEF site during the lifetime of the project (anticipated to be 30 years) would continue to be subject to BLM approval. However, temporary access restrictions to mineral resource extraction site(s) could occur as a result of project-related traffic. Therefore, the proposed OWEF could potentially impact mineral resources by temporarily impeding access due to project-related traffic. Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.7.2.

Construction, operation and maintenance, and decommissioning of the proposed OWEF would not result in impacts associated with the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (Significance Criterion MR-2).

Construction

- **MR-1.** Construction of the proposed OWEF would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Although construction activities could preclude sand and gravel production on the project site, those mineral resources are widely available in the region. Any potential access restrictions associated with the transportation of sand and gravel to the site during construction would be temporary. Impacts would be less than significant.

Operation and Maintenance

- **MR-1.** Operation and maintenance of the proposed OWEF would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Access onto and across the proposed OWEF site for the purposes of mineral exploration and extraction would be subject to permitting authority of the BLM, as consistent with existing and pre-project conditions. Traffic associated with operation and maintenance of the proposed OWEF would have a small potential to result in temporary access restrictions to mineral operations in the area, as a result of trucks hauling aggregate for road maintenance; however, this would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Impacts would be less than significant.

Decommissioning

- **MR-1.** Decommissioning of the proposed OWEF would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur.

4.7.4 Alternative 2: 137 Wind Turbine Generators

This analysis of direct and indirect impacts for Alternative 2 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

4.7.4.1 Direct and Indirect Impacts

Construction

Section 2.1.3.2.4 (Gravel, Aggregate, Concrete Needs and Sources) of this EIS/EIR describes that appropriate sources of sand and gravel in proximity to the proposed OWEF site would be identified by a construction contractor and permitted through the BLM, and would include up to three 15-acre locations within or near the proposed OWEF site. It is reasonably assumed that the source(s) of sand and gravel used for the Proposed Action would be used for Alternative 2. Due to the construction of 21 fewer wind towers under Alternative 2, the demand for sand and gravel associated with concrete tower foundations would be slightly less, and the number of truck trips that could potentially affect access to mineral resources in the area as a result of hauling aggregate to and from the site would also be slightly less. With regards to the Interim Rule described above and as with the Proposed Action, it is not development of Alternative 2 that would temporarily segregate mining claims and wind ROW applications; it is the BLM's effort to effectively manage public lands towards the purposes of multiple uses, where applicable, and to minimize conflicts between such uses to the maximum extent practicable. As described by the Interim Rule, segregation between mining claims and renewable energy applications would be temporary (up to two years) and of a duration that is considered reasonable to allow for processing of renewable energy applications on public lands. Once a ROW has been authorized, subsequently located mining claims would be subject to the previously authorized use, and any future mining claimant would have notice of such use (Federal Register, 2011).

As with Alternative 1, development of Alternative 2 may restrict or preclude access to salable resources within the OWEF project boundaries; however, the common occurrence of these resources throughout Imperial County would lessen the extent of this potential impact. Alternative 2 would not substantially interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources.

Operation and Maintenance

Operation and maintenance activities for Alternative 2 would be the same as for the Proposed Action, and would not place pressure on the supply of local sand and gravel, such as required for road maintenance. Truck trips associated with transporting any small amount of sand and gravel required for road maintenance could potentially result in temporary access restrictions to mineral operations in the area, due to the presence of trucks hauling aggregate material to and from the site, but such restrictions are considered unlikely and would be temporary. Operation and maintenance of Alternative 2 would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site.

Decommissioning

Decommissioning of Alternative 2 would not require a source of mineral resources such as sand and gravel, and would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site.

4.7.4.2 CEQA Significance Determinations

As described above, Alternative 2 would require a source of sand and gravel during the construction and operation/maintenance phases, but development of Alternative 2 would not interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources. As with the Proposed Action, development of Alternative 2 does not alter BLM's jurisdiction or authority as related to mineral claims and explorations, and the potential for future explorations for mineral resources to occur on the site during the lifetime of the project (anticipated to be 30 years) would continue to be subject to BLM approval. However, temporary access restrictions to mineral resource extraction site(s) could occur as a result of project-related traffic. Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.7.2.

Construction, operation and maintenance, and decommissioning of Alternative 2 would not result in impacts associated with the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (Significance Criterion MR-2).

Construction

- **MR-1.** Construction of Alternative 2 would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Although construction activities could temporarily preclude mineral operations in the area, such restrictions are considered unlikely and would be temporary. Impacts would be less than significant.

Operation and Maintenance

- **MR-1.** Operation and maintenance of Alternative 2 would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Access onto and across the Alternative 2 site for the purposes of mineral exploration and extraction would be subject to permitting authority of the BLM, as consistent with existing and pre-project conditions. Traffic associated with operation and maintenance of Alternative 2 would have a small potential to result in temporary access restrictions to mineral operations in the area, as a result of trucks hauling aggregate for road maintenance; however, this would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Impacts would be less than significant

Decommissioning

- **MR-1.** Decommissioning of Alternative 2 would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur.

4.7.5 Alternative 3: 105 Wind Turbine Generators

This analysis of direct and indirect impacts for Alternative 3 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

4.7.5.1 Direct and Indirect Impacts

Construction

Section 2.1.3.2.4 (Gravel, Aggregate, Concrete Needs and Sources) of this EIS/EIR describes that appropriate sources of sand and gravel in proximity to the proposed OWEF site would be identified by a construction contractor and permitted through the BLM, and would include up to three 15-acre locations within or near the proposed OWEF site. It is reasonably assumed that the source(s) of sand and gravel used for the Proposed Action would be used for Alternative 3. Due to the construction of 53 fewer wind towers under Alternative 2, the demand for sand and gravel associated with concrete tower foundations would be slightly less, and the number of truck trips that could potentially affect access to mineral resources in the area due to hauling aggregate to and from the site would also be slightly less. With regards to the Interim Rule described above and as with the Proposed Action, it is not development of Alternative 3 that would temporarily segregate mining claims and wind ROW applications; it is the BLM's effort to effectively manage public lands towards the purposes of multiple uses, where applicable, and to minimize conflicts between such uses to the maximum extent practicable. As described by the Interim Rule, segregation between mining claims and renewable energy applications would be temporary (up to two years) and of a duration that is considered reasonable to allow for processing of renewable energy applications on public lands. Once a ROW has been authorized, subsequently located mining claims would be subject to the previously authorized use, and any future mining claimant would have notice of such use (Federal Register, 2011).

Development of Alternative 3 may restrict or preclude access to salable resources within the OWEF project boundaries; however, the common occurrence of these resources throughout Imperial County would lessen the extent of this potential impact. Alternative 3 would not substantially interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources.

Operation and Maintenance

Operation and maintenance activities for Alternative 3 would be the same as for the Proposed Action, and would not place pressure on the supply of local sand and gravel, such as required for road maintenance. Truck trips associated with transporting any small amount of sand and gravel required for road maintenance could potentially result in temporary access restrictions to mineral operations in the area due to the presence of trucks hauling aggregate to and from the site, but such restrictions are considered unlikely and would be temporary. Operation and maintenance of Alternative 3 would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site.

Decommissioning

Decommissioning of Alternative 3 would not require a source of mineral resources such as sand and gravel, and would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site.

4.7.5.2 CEQA Significance Determinations

As described above, Alternative 3 would require a source of sand and gravel during the construction and operation/maintenance phases, but development of Alternative 3 would not interfere with any active mining operations, and would not constitute a substantial impact on regionally or locally important mineral resources. As with the Proposed Action, development of Alternative 3 does not alter BLM's jurisdiction or authority as related to mineral claims and explorations, and the potential for future explorations for mineral resources to occur on the site during the lifetime of the project (anticipated to be 30 years) would continue to be subject to BLM approval. However, temporary access restrictions to mineral resource extraction site(s) could occur as a result of project-related traffic. Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.7.2.

Construction, operation and maintenance, or decommissioning of Alternative 3 would result in impacts associated with the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (Significance Criterion MR-2).

Construction

- **MR-1.** Construction of Alternative 3 would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Although construction activities could temporarily preclude mineral operations in the area, such restrictions are considered unlikely and would be temporary. Impacts would be less than significant.

Operation and Maintenance

- **MR-1.** Operation and maintenance of Alternative 3 would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Access onto and across the Alternative 3 site for the purposes of mineral exploration and extraction would be subject to permitting authority of the BLM, as consistent with existing and pre-project conditions. Traffic associated with operation and maintenance of Alternative 3 would have a small potential to result in temporary access restrictions to mineral operations in the area, as a result of trucks hauling aggregate for road maintenance; however, this would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Impacts would be less than significant.

Decommissioning

- **MR-1.** Decommissioning of Alternative 3 would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur.

4.7.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.7.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur and existing conditions relevant to mineral resources would continue. No impact would occur due to the Proposed Action; however, the area would be available to development in the future. In the future, if other development projects are implemented, similar impacts to mineral resources as those described for the proposed OWEF could occur.

4.7.6.2 CEQA Significance Determinations

Alternative 4 would not result in impacts to mineral resources.

4.7.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.7.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to mineral resources would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur.

4.7.7.2 CEQA Significance Determinations

Alternative 5 would not result in impacts to mineral resources.

4.7.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.7.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, similar impacts to mineral resources as those described for the proposed OWEF could occur.

4.7.8.2 CEQA Significance Determinations

Alternative 6 would not result in impacts to mineral resources.

4.7.9 Cumulative Impacts

4.7.9.1 Geographic Extent/Context

The geographic extent of the cumulative analysis for the proposed OWEF is Imperial County, including BLM lands within the county. The State Mining and Geology Board typically designates Mineral Resource Zones at the county level, and the Imperial County General Plan analyzes mineral availability county-wide. In addition, mining has been a long-standing activity on BLM lands, and the BLM addresses mining actions through the California Desert Conservation Area (CDCA) Plan, which would be amended under the Proposed Action and several alternatives. Therefore, Imperial County is an appropriate geographic scope for this cumulative analysis of mineral resources, with consideration to past, present, and reasonably foreseeable cumulative projects, as discussed below. After construction of the project is complete, the BLM may allow mining operations and/or access through the area. Therefore, the temporal scope of this cumulative analysis is the construction period for the proposed OWEF or an alternative, because potential impacts to mineral resources of the proposed OWEF or an alternative is primarily limited to the construction period.

4.7.9.2 Existing Cumulative Conditions

Past and ongoing development throughout the proposed OWEF area has resulted in alterations to the natural landscape, including loss of mineral resources and restricted access to mineral resources. Those projects which comprise existing cumulative conditions for mineral resources include active mineral developments, as well as projects which establish residential and urban development that have either removed mineral resources, or restricted access to mineral resources. These conditions would be limited to the areas within and adjacent to the boundaries of individual projects. Because mineral resources are evaluated for their regional importance, cumulative impacts to mineral resources must be considered within the county as a whole, including BLM lands within the county. Table 4.1-1 identifies all projects within the cumulative scenario, while Table 3.8-1 (Mineral Resources in the Proposed OWEF Area) describes all known past and current mineral developments in the area, including the operation type, minerals/materials, type of commodity, proximity to proposed turbines, and proximity to the community of Ocotillo. This table represents the existing cumulative conditions relevant to mineral resources

4.7.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. All projects listed in Table 4.1-1 include a mineral resources component, such as the manufacturing of concrete and potential introduction of access restrictions to existing or potential mineral resources; therefore, cumulative projects relevant to mineral resources are not re-listed here, but rather are incorporated by reference throughout this discussion. As mentioned in Section 4.7.9.1, the geographic extent of the cumulative scenario for mineral resources is the entire County of Imperial, including BLM lands within the county. Most of the Imperial County projects listed in Table 4.1-1 and identified on Figure 4.1-1b have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR.

4.7.9.4 Construction

As mentioned above, impacts to mineral resources are site-specific, and a cumulative impact would only occur where the proposed OWEF and other projects would affect mineral resources in the same way, within the same time, and at the same location. There are no active mineral resource operations within the proposed OWEF site boundaries, and the proposed OWEF or an alternative would not result in the loss of availability of a locally important mineral resource or a known regionally important mineral resource, and any potential impacts associated with restricted access would be temporary and of short duration, associated strictly with the transport of aggregate materials to and from the site. Sand and gravel resources are common in the proposed OWEF area, and construction of the proposed OWEF would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site and would not substantially contribute to adverse cumulative impact to mineral resources.

4.7.9.4 Operation and Maintenance

Operation and maintenance of the proposed OWEF would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site. As previously described, mining claims on public lands under BLM jurisdiction are subject to BLM authority; the presence of the proposed OWEF or an alternative would not alter this jurisdiction or authority and would not remove access to any known mineral resource. Operation and maintenance of the proposed OWEF or an alternative would not result in adverse cumulative impacts.

4.7.9.4 Decommissioning

Decommissioning of the proposed OWEF or an alternative would not require a source of mineral resources such as sand and gravel, and would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, or of a locally important mineral resource recovery site., as described in preceding sections. Therefore, decommissioning of the proposed OWEF or an alternative would not contribute to adverse cumulative impacts.

4.7.9.5 CEQA Significance Determinations

With regard to the loss of availability of a locally important mineral resource or a known, regionally important mineral resource, development of the Proposed Action or an alternative could potentially result in temporary access restrictions associated with the presence of project-related trucks hauling aggregate material to and from the site. Such effects are not anticipated to have the potential to combine with similar impacts of other projects such that a significant impact to mineral resources would occur. Cumulative impacts associated with construction would be less than significant.

No cumulative impacts to mineral resources would occur as a result of operation and maintenance of the proposed OWEF.

Decommissioning of the proposed OWEF or an alternative could result in temporary access restrictions to mineral resource sites due to the presence of trucks hauling materials to and from the site, similar to the potential effects that could occur during project construction; such impacts would be temporary and less than significant.

4.7.10 Mitigation Measures

As discussed above, operation and maintenance of the proposed OWEF would result in temporary access restrictions to mineral operations in the area, as a result of trucks hauling aggregate for road maintenance; however, this would not result in impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state (see detailed discussion in section 4.7.1). No mitigation measures are proposed.

4.7.11 Residual Impacts After Mitigation

The construction, operation and maintenance, and decommissioning of the proposed OWEF would not result in any unavoidable adverse impacts.

4.8 Multiple-Use Classes

4.8.1 Methodology for Analysis

The Multiple-Use Class (MUC) Guidelines in Table 1 of the California Desert Conservation Area (CDCA) Plan provide that wind electrical generation facilities may be allowed within the MUC Limited Use (L) designation after NEPA requirements are met. This analysis discusses the Proposed Action and alternatives' consistency with the requirements of each of the land use activities listed in Table 1 of the CDCA Plan.

Impacts/effects associated with other existing land use activities are discussed in separate sections of Chapters 3 and 4, and are as follows: Lands and Realty (Section 3.6 and 4.6); Livestock grazing (Section 3.7); Mineral Resources (Sections 3.8 and 4.7); Recreation (Sections 3.13 and 4.12); and Wild Horses and Burros (Section 3.21).

4.8.2 CEQA Significance Criteria

The MUCs are designated by the BLM's CDCA Plan; therefore, no CEQA significance criteria are defined for MUC designations.

4.8.3 Alternative 1: Proposed Action

The Proposed Action is located within MUC-L lands (refer to Appendix A, Figure 3.6-2). The classification designations govern the type and degree of land use action allowed within the classification area. All land use actions and resource management activities on BLM-administered lands within a MUC delineation must meet the guidelines for that class. These guidelines are listed on Table 1, MUC Guidelines, of the CDCA Plan (page 15). MUC-L allows electric generation plants for wind facilities after NEPA requirements are met. The following is a consistency analysis of the Proposed Action for each land use activity:

1. *Agriculture: Agricultural uses of Class L lands are not allowed, with the exception of livestock grazing.* The site is not currently used for agriculture and the Proposed Action would not involve use of the site for agriculture.
2. *Air Quality: Class L lands are to be managed to protect air quality and visibility in accordance with Class II objectives of Part C of the Clean Air Act as amended.* The anticipated maximum daily and annual construction emissions that would be associated with the Proposed Action are provided in Table 4.2-3 and Table 4.2-4 of Section 4.2 (Air Resources). Both maximum daily and annual construction emissions would occur in 2012. The analysis indicates, with the exception of NOx and PM10 impacts during construction, that the proposed OWEF would not create new exceedances or contribute to existing exceedances for any of the criteria air pollutants. Maximum annual construction emissions would not exceed any of the applicable general conformity *de minimis* thresholds. The maximum daily and annual operation emissions that would be associated with the Proposed Action are provided in Table 4.2-5 and table 4.2-6. Annual operation emissions are anticipated to be well under the general conformity *de minimis* thresholds. The magnitude of the impacts of decommissioning emissions are expected to be significantly less than those estimated for project construction since decommissioning would occur after at least 30 years of operation, and it is expected that on-road and off-road equipment engine technology would be far more advanced and

cleaner than is currently the case. Therefore, the Proposed Action would conform to the Class II objectives referenced in the CDCA Plan guidelines.

3. *Water Quality: Class L lands are to be managed to provide for the protection and enhancement of surface and groundwater resources, except for instances of short-term degradation caused by water development projects; BMPs developed by the BLM during the planning process outlined in the Clean Water Act (CWA) Section 208 will be used to avoid degradation and to comply with Executive Order 12088 (BLM, 1980).* The CWA Section 208 and Executive Order 12088 both address federal compliance with pollution control standards. The BLM's *Final Programmatic EIS on Wind Energy Development on BLM-Administered Lands in the Western United States* established programmatic BMPs for wind development on BLM lands in western states, including California. These BMPs are listed in Section 4.19 (Water Resources) of this EIS/EIR and would be implemented as part of the Proposed Action. With implementation of the BLM's programmatic BMPs for wind development, as well as mitigation measures developed for the Proposed Action (as presented in Section 4.19.10 of this EIS/EIR), impacts to water resources and water quality would be minimal, and the Proposed Action would conform to the guidelines for MUC-L lands presented in Table 1 of the CDCA Plan.

4. *Cultural and Paleontological Resources: Cultural and paleontological resources will be preserved and protected. Procedures described in 36 CFR 800 will be observed where applicable.* As described in detail in Sections 4.4 and 4.10, impacts on cultural and paleontological resources resulting from the development and operation of the Proposed Action would be mitigated and would conform to the MUC Guidelines. Adverse effects on cultural resources listed on or determined eligible for the National Register of Historic Places will be resolved in accordance with a Memorandum of Agreement being prepared for the project in consultation with the California State Historic Preservation Officer, Native American tribes, and other interested parties in accordance with Section 106 of the NHPA. Identification of the site location for the proposed action is subject to the MUC Guidelines for cultural and paleontological resource protection as is evidenced by the applicability of the guidelines to the specific facility proposal. As such, the project site locations are within the MUC Guidelines for cultural and paleontological resource protection established by the CDCA Plan.

5. *Native American Values: Native American cultural and religious values will be protected and preserved with appropriate Native American groups consulted.* Consultation with Native American tribes was initiated during project planning and will continue during the NEPA process, refer to Chapter 5.2 for the details regarding the consultation processes. Opportunities have been provided to allow Native American tribes to identify places and resources of importance to them and to express concerns regarding cultural and religious values that could be impacted by the Proposed Action.

   Adverse effects on any places of traditional cultural or religious importance that are identified by tribes will be resolved in accordance with the Memorandum of Agreement being developed for the project with tribal participation. Potential impacts to and protection of cultural resources are discussed in more detail in Section 4.4. Collectively, these measures ensure that preservation and protection of Native American cultural and religious values associated with cultural resources is accomplished in accordance with the CDCA Plan MUC Guidelines.

6. *Electrical Generation Facilities: Wind generation may be allowed on Class L lands after NEPA requirements are met.* This Plan Amendment & EIS/EIR will act as the mechanism for complying with those NEPA requirements.

7. *Transmission Facilities: New gas, electric, and water transmission facilities and cable for interstate communication may be allowed only within designated corridors, and NEPA requirements must be met.* The Proposed Action would require a 250-foot 500-kV stub line to connect to the new San Diego Gas & Electric Sunrise Powerlink transmission line. This transmission line meets this guideline by locating the gen-tie connection to the interstate transmission system within a CDCA-designated utility corridor.
8. *Communication Sites: Communication sites may be allowed on Class L lands after NEPA requirements are met.* The Proposed Action would not involve installation of communications sites.
9. *Fire Management: Fire suppression measures in Class L areas will be taken in accordance with specific fire management plans, subject to such conditions as the authorized officer deems necessary.* The OWEF site is located in a federal responsibility area (FRA) under the jurisdiction of BLM, and the site is within a moderate Fire Hazard Severity Zone (FHSZ) except for a small portion of the site at the project's southwestern boundary, which is within a high FHSZ. The Applicant has developed fire suppression measures that would be used for the Proposed Action, and these measures are discussed in Section 4.20. In addition, the Applicant would be required to submit a Fire Safety Plan for use during construction and decommissioning, and also install an automatic fire extinguishing system that complies with international standards. Should a fire occur in the area that is not specific to the facility, it would be addressed by BLM, not by the Applicant, and it would be addressed in conformance with the Fire Safety Plan and, therefore, would conform to the guideline for Fire Management for this MUC.
10. *Vegetation:* Table 1 of the CDCA Plan includes a variety of guidelines associated with vegetation as follows:

    Vegetation Harvesting

    Native Plants – Commercial or non-commercial removal of native plants in Class L areas may be allowed only by permit after NEPA requirements are met, and after development of necessary stipulation. Approval of a ROW grant for the Proposed Action would constitute the permit for such removal. The BMPs in the EIS/EIR and conditions of approval that would be required in a Record of Decision would constitute the stipulations to avoid or minimize impacts from removal of native plants.

    Harvesting by mechanical means – Harvesting by mechanical means may be allowed by permit only. Although the Proposed Action may include the collection of seeds to assist with reclamation, the removal of these items would not be done for distribution to the public. Also, the guidelines for vegetation harvesting include encouragement of such harvesting in areas where the vegetation would be destroyed by other actions, which would be the case with the Proposed Action. Therefore, the Proposed Action would be in conformance with this MUC guideline.

    Rare, Threatened, and Endangered Species, State and Federal – In all MUC areas, all State and federally listed species will be fully protected. In addition, actions which may jeopardize the continued existence of federally listed species will require consultation with the U.S. Fish and Wildlife Service. As evaluated in Section 4.17, no federal or State listed plants would be impacted by the Proposed Action.

Sensitive Plant Species – Identified sensitive plant species would be given protection in management decisions consistent with BLM's policy for sensitive species management, BLM Manual 6840. The objective of this policy is to conserve and/or recover listed species, and to initiate conservation measures to reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing. Thirteen special status plants were identified, three are considered BLM-sensitive plants, which include the Little San Bernardino Mountains linanthus (*Linanthus maculatus*), Haydon's lotus (*Lotus haydonii*), and the Mountain Springs bush lupine (*Lupinus excubitus* var. *medius*). Impacts and mitigation associated with these species were discussed in Section 4.17. In an effort to protect special status plants, the Applicant redesigned the project site to avoid special status plants. In addition, mitigation measures included in the EIR/EIS would reduce the number of individuals of the species that would be affected. Because these measures are intended to reduce threats to these species to minimize the likelihood of listing, these measures are in conformance with the MUC guidance in the CDCA Plan.

Unusual Plant Assemblages (UPAs) - No UPAs have been identified on the proposed OWEF site.

Vegetation Manipulation

Mechanical Control –Mechanical control may be allowed after consideration of possible impacts. Vegetation manipulation is defined in the CDCA Plan as removing noxious or poisonous plants from rangelands; increasing forage production; creating open areas within dense brush communities to favor certain wildlife species; or eliminating introduced plant species. During construction, O&M, and decommissioning phases, the Proponent would abide by noxious weed control procedures as developed in cooperation with the BLM and Imperial County. The establishment of noxious/invasive vegetation can be limited by early detection and eradication. The Applicant would finalize the site-specific Weed Management Plan prior to a ROW grant being issued. Such actions would be conducted as part of the Proposed Action. Weed management under the Weed Management Plan would conform to federal, State, and local regulations.

Chemical Control – Aerial broadcasting application of chemical controls will not be allowed. Noxious weed eradication may be allowed after site-specific planning. The Proposed Action would not include aerial broadcasting; and if chemical treatment is applied, it would be consistent with BLM's Record of Decision (ROD): Vegetation Treatments Using Herbicides (BLM 2007a), as supported by the Programmatic Environmental Impact Statement (PEIS) for Vegetation Treatments Using Herbicides (BLM 2007b). Specific control measures are described in the Proponent's Plan of Development.

Exclosures – Exclosures may be allowed. Exclosure is a manipulation technique where livestock and certain wildlife species can be excluded from fenced areas. This procedure provides comparison data and is valuable in the determination of grazing effects of vegetation. The Proposed Action would not include exclosures.

Prescribed Burning – Prescribe burning may be allowed after development of a site-specific management plan. The Proposed Action would not include prescribed burning.

11. *Land Tenure Adjustment: Class L land may be sold in accordance with FLPMA and other applicable Federal laws and regulations*. The Proposed Action would not involve the sale of any BLM-administered lands.

12. *Livestock Grazing: Livestock grazing is allowed subject to the protection of sensitive resources.* The Proposed Action would not involve the livestock grazing on Class L lands.
13. *Minerals:* The Proposed Action would not involve the development of minerals on Class L lands.
14. *Motorized Vehicle Access/Transportation: Pursuant to the CDCA MUC guidelines for Class L areas, new roads and ways may be developed under ROW grants or approved plans of operation, and periodic or seasonal closures or limitations of routes of travel may be required.* The Proposed Action would not include new OHV designations; however, construction of the Proposed Action would result in temporary closures or limitations to the OHV roads on the project site.
15. *Recreation:* The Proposed Action would not involve use of the OWEF site for recreational uses.
16. *Waste Disposal:* The Proposed Action would not involve the development of waste disposal sites.
17. *Wildlife Species and Habitat:* Table 1 of the CDCA Plan includes a variety of guidelines associated with wildlife as follows:

    Rare, Threatened, and Endangered Species, State and Federal – In all MUC areas, all State and federally listed species and their critical habitat will be fully protected. In addition, actions which may jeopardize the continued existence of federally listed species will require consultation with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. As evaluated in Section 4.21, Wildlife Resources, the Peninsular bighorn sheep is the only federally listed species potentially affected by the Proposed Action. Measures developed as part of the Proposed Action would avoid, minimize, and/or compensate for potential effects to the Peninsular bighorn sheep. As specified in the guideline, BLM will initiate formal consultation with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. BLM has worked with USFWS, CDFG, and the Applicant to develop protection and compensation measures for the Peninsular bighorn sheep. Therefore, the Proposed Action would comply with the guideline to provide full protection to the species.

    Sensitive Species – Identified species would be given protection in management decisions consistent with BLM's policy for sensitive species management, BLM Manual 6840. The objective of this policy is to conserve and/or recover listed species, and to initiate conservation measures to reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing. Several BLM sensitive wildlife species (other than the Peninsular bighorn sheep, identified and discussed in the previous paragraph) present or likely to occur on habitat associated with the Proposed Action include, but are not limited to, flat-tailed horned lizard, barefoot banded gecko, Golden Eagles, and migratory birds and bats. Those species that are likely to occur on the project site would be protected under a number of mitigating measures meant to avoid, minimize, or compensate for impacts from the project as discussed in detail in Section 4.21, Wildlife Resources.

    Predator and Pest Control – Control of depredation wildlife and pests will be allowed in accordance with existing State and federal laws. The Proposed Action would include a Raven Control Plan for the depredation on the flat-tailed horn lizards. Therefore, this guideline is applicable to these actions but is allowed subject to conformance with State and federal laws.

    Habitat Manipulation – The Proposed Action would not include habitat manipulation.

Reintroduction or Introduction of Established Exotic Species – The Proposed Action would not include the reintroduction or introduction of exotic species.

18. *Wetland/Riparian Areas:* No wetlands or riparian areas are present on the proposed OWEF site.

19. *Wild Horses and Burros:* No wild and free-roaming horses or burros are present on the OWEF site.

4.8.3.1 Direct and Indirect Impacts

Construction

The total acreage of the MUC-L designation that would be affected by construction of the wind facility under the Proposed Action would be 12,416 acres. Construction would result in temporary disruptions to existing allowable land uses, in particular, on-site recreation activities. However, as discussed in Section 4.16, Recreation, impacts to recreation activities would be temporary and the public access to the project site would be restored after construction. No changes in the MUC classification would be required prior to approving the ROW grant, and as discussed in the consistency analysis above, the land use activities associated with the construction of the Proposed Action would be consistent with MUC Guidelines.

Operation and Maintenance

As mentioned above under "Construction", the Proposed Action would be located within the MUC-L designation. The MUC Guidelines state that electrical generation facilities, including wind generation, may be allowed after NEPA requirements are met. No changes in the MUC classification would be required prior to approving the ROW grant, and as discussed in the consistency analysis above, the land use activities associated with the operation and maintenance of the Proposed Action would be consistent with MUC Guidelines.

Decommissioning

As mentioned above under "Construction", the Proposed Action would be located within the MUC-L designation. Decommissioning activities would cause temporary disturbances to users of the recreation areas, similar to those described under "Construction" above. However, after the Proposed Action has been decommissioned, users would experience a beneficial impact, as the permanent impacts, described for "Operation and Maintenance" above, would be removed, and the site would be returned to an undeveloped state.

4.8.3.2 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.4 Alternative 2: 137 Wind Turbine Generators

4.8.4.1 Direct and Indirect Impacts

Alternative 2 is similar to the Proposed Action (Alternative 1) and would be located in roughly the same location, but with 21 fewer WTGs (137 total). The conclusions for the consistency analysis for each land use activity associated with Alternative 2 are the same as those for the Alternative 1.

Construction

During construction of this alternative, potential impacts would be the same as described under "Construction" for Alternative 1. Since construction of Alternative 2 would be completed in a single phase, the duration of impacts would occur over a shorter period of time as compared to Alternative 1.

Operation and Maintenance

During operation and maintenance of this alternative, potential impacts would be the same as described under "Operation and Maintenance" for Alternative 1.

Decommissioning

During decommissioning of this alternative, potential impacts would be the same as described under "Decommissioning" for Alternative 1.

4.8.4.2 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.5 Alternative 3: 105 Wind Turbine Generators

4.8.5.1 Direct and Indirect Impacts

Alternative 3 is similar to the Proposed Action (Alternative 1), but with 53 fewer WTGs (105 total). Alternative 3 is located within MUC-L lands. The conclusions of the consistency analysis for each land use activity associated with Alternative 3 are the same as that for Alternative 1.

Construction

During construction of this alternative, potential impacts would be the same as described under "Construction" for the Proposed Action. Since construction of Alternative 3 would be completed in a single phase, the duration of impacts would occur over a shorter period of time as compared to Alternative 1.

Operation and Maintenance

During operation and maintenance of this alternative, potential impacts would be the same as described under "Operation and Maintenance" for Alternative 1.

Decommissioning

During decommissioning of this alternative, potential impacts would be the same as described under "Decommissioning" for Alternative 1.

4.8.5.2 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.8.6.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would not amend the CDCA Plan. As a result, no wind energy project would be constructed, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because there would be no amendment to the CDCA Plan and no wind project approved for the site under this alternative, no new structures or facilities would be constructed or operated on the site and no new ground disturbance would occur. However, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Construction and operation impacts would occur at these other sites.

4.8.6.2 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.8.7.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the site, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would remain in its existing condition unless another use is designated in this amendment. As such, this No Project Alternative would have no adverse impact on BLM-designated lands within and adjacent to the site in the long term. However, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Construction and operation impacts would occur at these other sites.

4.8.7.2 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.8.8.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF, but would amend the CDCA Plan to allow for other wind projects on the site. As a result, it is possible that another wind energy project could be constructed on the site. If this were to occur, it is likely that construction, operation and decommissioning impacts would be similar to the impacts from Alternative 1.

4.8.8.2 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.9 Cumulative Impacts

4.8.9.1 Geographic Extent/Context

The geographic extent for the analysis of cumulative impacts related to MUC designations are the local and regional BLM lands under the CDCA Plan. This area is defined as the geographic extent because cumulative impacts could result from the construction and operation of large renewable energy projects on MUC-designated lands (refer to the projects listed in Table 4.1-1). Past development on MUC-designated lands includes all of the land use actions and resource management activities discussed for Alternative 1. Common activities in the vicinity of the proposed OWEF site include recreational facilities (OHV routes in particular), mineral exploration, transportation development, and transmission facilities. The potential for impacts to MUC-designated lands has recently increased due to the influx of applications for solar and wind energy facilities.

4.8.9.2 Existing Cumulative Conditions

Locally and regionally, MUC-designated lands primarily consist of wilderness, conservation, and recreational areas. Past and present projects include management plans and, more recently, renewable energy generation facilities.

4.8.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR.

Recently, several renewable energy projects have been proposed and approved within the California desert. Proposed projects in the vicinity of the proposed OWEF site that would have potentially adverse direct or indirect impacts to BLM lands include the solar and wind energy development projects listed in

Table 4.1-1 that would be sited on MUC-designated lands, along with the Sunrise Powerlink and the transmission line corridors for the Imperial Solar Energy Centers (West and South). As noted in Table 4.1-2, cumulative impacts to MUC-designated lands as a result of these projects include restrictions or the preclusion of otherwise allowable land uses. Of the cumulative projects listed in Table 4.1-1 and identified on Figure 4.1-1a, the cumulative projects that would impact MUC-L designated lands are listed in Table 4.8-1, along with the acreage of each cumulative project site.

In addition, the Sunrise Powerlink includes approximately 55 miles extending through land primarily under the jurisdiction of the BLM within the southwestern portion of Imperial County and the southeastern portion of San Diego County; and the entire five-mile transmission line corridors for both the Imperial Solar Energy Center West and South would be located within the MUC-L designation of the CDCA Plan.

Table 4.8-1. Cumulative Projects within the MUC-L Designation

Project Name	Approximate Acreage
Imperial Valley Solar Project	6,140
SDG&E Proposed Photovoltaic Solar Field, CACA-051625	100
Renewergy, LLC, CACA 048004 (wind testing)	N/A*
Blythe Energy Project	9,400
Ivanpah Solar Electric Generating System	4,073

*Specific project information is not available.

4.8.9.4 Construction

Construction of the Proposed Action requires a CDCA Plan Amendment and consistency with the MUC Guidelines. It is expected that some of the cumulative projects described above may be under construction at the same time as the proposed OWEF, which may result in limited access to BLM lands in the Imperial Valley and the surrounding area. As a result, there may be substantial short-term impacts during construction of those cumulative projects related to use of the MUC-designated lands, and the Proposed Action could contribute to these possible short-term cumulative impacts.

In particular, tower erection for the Sunrise Powerlink in the vicinity of Ocotillo was completed at the end of 2011, but stringing activities will continue into 2012; and construction of the Imperial Solar Center West and South projects is expected to begin in September 2011 and last for 17 months. Construction dates for the Imperial Valley Solar Project, the SDG&E Proposed Photovoltaic Solar Field, and the Renewergy wind testing site are unknown; however, considering that these projects are reasonably foreseeable, the assumption is that construction periods could overlap with the proposed OWEF. Therefore, impacts to MUC-L lands associated with construction of these cumulative projects may overlap with the proposed OWEF due to the proximity of these projects to the OWEF site.

Construction impacts associated with the Blythe Energy Project and the Ivanpah Solar Electric Generating System may also occur at the same time period as the proposed OWEF. However, the Blythe Energy Project is located approximately 100 miles northeast of the project site and the Ivanpah Solar Electric Generating System is located approximately 180 miles northeast of the project site. Although construction impacts would be similar, due to the distance between the cumulative project and the Proposed Action, the impacts would not have a combined effect on the use of the MUC-L designated lands near the project site.

Presently, as noted above, numerous energy-related development projects, including the Proposed Action, would remove large acreages of land from potential use and would have adverse effects on the viewscape that would result in some users seeking out other areas of the desert for their activities (see the cumulative analysis in the Visual Resources section). The combined effect of the construction of past, present, and reasonably foreseeable projects in the Imperial Valley would adversely affect BLM lands, particularly for recreational uses (refer to Section 4.12 for impacts associated with recreational resources). However, the operation of the proposed OWEF would allow for access to the project site to resume after construction in the areas surrounding the wind turbines and associated facilities. Nonetheless, disruptions to MUC-designated lands due to the proposed OWEF and other renewable energy projects during the construction period could result in a cumulative impact. Impacts to recreation activities would be temporary and the public access to the project site would be restored after construction.

4.8.9.5 Operation and Maintenance

Operation of the proposed OWEF is not expected to result in long-term adverse impacts associated with the disruption or interfere with the public's right of access to the project site. It is expected that some of the cumulative projects described above may be operational at the same time as the proposed OWEF. In particular, the proposed and approved solar energy projects would result in the conversion of thousands of acres of desert lands that are currently designated for MUC land use activities. Altogether the Imperial Valley Solar Project, the SDG&E Proposed Photovoltaic Solar Field, the Blythe Energy Project, and the Ivanpah Solar Electric Generating System would result in the permanent conversion of 19,713 acres of land within the MUC-L designation. As a result, there may be substantial long-term land use and recreation impacts during operation of the renewable energy projects (refer to Section 4.12 for impacts associated with recreational resources). However, the proposed OWEF would not contribute substantially to these potentially long-term operational cumulative impacts since the site would be available for recreation activities during the operation period.

4.8.9.6 Decommissioning

The decommissioning of the Proposed Action is expected to result in adverse temporary impacts to MUC-designated lands similar to construction impacts. Disruptions from the decommissioning of other renewable energy projects would have the potential to combine with the decommissioning activities associated with the proposed OWEF, which would result in a cumulative impact. However, the proposed OWEF's contribution to cumulative impacts to MUC-designated lands would be temporary due to nature of decommissioning activities and the proposed OWEF site would be returned to the current state. In addition, decommissioning activities for other renewable energy projects would also be temporary and would return to current conditions as well.

4.8.9.7 CEQA Significance Determination

Appendix G of the State CEQA Guidelines does not provide significance criteria for BLM MUCs; therefore, no significance determination has been made.

4.8.10 Mitigation Measures

No mitigations measures, project design features, or other measures are required by the MUC Guidelines.

4.8.11 Residual Impacts After Mitigation

There would be no adverse unavoidable impact to the MUC-L as a result of construction, operation and maintenance, or decommissioning of the Proposed Action.

4.9 Noise

4.9.1 Methodology for Analysis

Noise and vibration impacts associated with the proposed OWEF can be created by short-term construction and decommissioning activities and by normal long-term operation of the wind energy facility, including noise from the wind turbines, electrical collection system, substation and switchyard, and operations and maintenance (O&M) activities.

Noise from construction and decommissioning activities would include both on-site and off-site noise sources. The construction noise levels that would be generated by the proposed OWEF have been estimated based on the construction activities provided in the description of the Proposed Action and Alternatives (see Chapter 2) and are provided in Appendix F. Decommissioning noise levels would be similar to those estimated for construction. Operational noise levels from the wind turbines were modeled by Navcon Engineering Network (Navcon), based on the wind turbine model that would generate the highest noise level, which was determined to be the Siemens 2.3-MW turbine. Noise modeling results are provided in Appendix F. Other sources of operational noise, including transmission lines and the substation have been estimated based on available industry data. Noise from O&M activities have been estimated based on the description provided in the Proposed Action and Alternatives (see Chapter 2), and are also provided in Appendix F. Additional details regarding impact assessment methodologies are discussed under the relevant impact topic.

As discussed in Section 3.10.1, a project-generated noise increase of more than 3 dBA is a perceptible change in environmental noise, while a 5 dBA difference typically causes a change in community reaction. An increase of 10 dBA is perceived by people as a doubling of loudness, and almost certainly causes an adverse community response. As such, it is considered reasonable to assume that an increase in background noise levels up to 5 dBA in a residential setting would not be substantial and an increase of more than 10 dBA would be substantial. An increase between 5 and 10 dBA should be considered adverse, but may be either substantial or not substantial depending on the particular circumstances. Other factors to be considered in determining if an adverse noise impact is substantial include: (1) the resulting combined noise level; (2) the duration and frequency of the noise; (3) the number of people affected; (4) the land use designation of the affected receptor sites; and (5) public concern or controversy expressed at workshops, hearings, or in correspondence regarding the proposed project. For those elements of the project located on unincorporated Imperial County lands, the Imperial County General Plan Noise Element would apply (see Section 3.10.2.3). If the future noise level with implementation of the project is within the "normally acceptable" range shown in Table 3.10-5, but would result in an increase in ambient noise levels of 5 dB Ldn/CNEL or greater, the project would have a potentially adverse noise impact and mitigation measures must be considered; if the future noise level with implementation of the project would be greater than the "normally acceptable" range shown in Table 3.10-5, an increase in ambient noise levels of 3 dB Ldn/CNEL or greater shall be considered a potentially adverse noise impact and mitigation measures must be considered.

Almost the entire proposed OWEF site is located on BLM-administered lands. BLM does not have regulations specific to noise and the County noise ordinances are not applicable on public lands. However, as noted above, the County General Plan and noise ordinance establishes sound-level limits applicable to the residential properties located near the proposed OWEF site that could be impacted by the project, and as such they are being used in this analysis as a basis for describing possible impacts to these residences.

Noise impacts due to construction activities are usually not considered to be substantial as long as construction activities are temporary, only intermittently affect any one location, limit use of heavy equipment and noise activities to daytime hours, and all industry-standard noise abatement measures are implemented for noise-producing equipment.

With respect to impacts from vibration, vibration-sensitive land uses would include high-precision manufacturing facilities or research facilities with optical and electron microscopes. None of these occur in the project area. Therefore, a substantial impact resulting from excessive ground borne vibration would depend on whether a nuisance, annoyance, or physical damage to any structure could occur.

The primary indicator of noise levels for this analysis is the A-weighted average noise level measures in decibels (dBA Leq). The one-hour average noise level (dBA Leq [1-hour]) is often used to characterize ongoing operations or long-term effects. The maximum dBA level (dBA Lmax) is used to document the highest intensity, short-term noise level. Another commonly used measure of noise effects is the day-night average sound level (Ldn). The Ldn value matches the Leq value for noise generated from 7:00 a.m. to 10:00 p.m. but accounts for increased public sensitivity to noise at night with a 10 dBA penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

4.9.2 CEQA Significance Criteria

The indicators listed below were used to describe the noise impacts of the proposed OWEF under CEQA. These indicators are the same as the significance criteria for noise listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines.

NZ-1 *Exposure of persons to or generation of noise levels in excess of standards established in local general plan or noise ordinance, or applicable standards of other agencies;*

NZ-2 *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;*

NZ-3 *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;*

NZ-4 *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;*

NZ-5 *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;*

NZ-6 *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.*

For the OWEF, the criteria numbered NZ-5 and NZ-6 were determined to be inapplicable as no impact would occur related to these criteria (see discussion in paragraph below), and are therefore not addressed further in the impact analysis presented in this section.

The OWEF site is not located within an airport land use plan or within two miles of a public or public use airport (Significance Criterion NZ-5 and NZ-6). The closest public airport is Jacumba Airport approximately 7.3 miles southwest from the OWEF site. Emory Ranch Airport is a private airstrip located approximately 0.25 mile from the boundary of the project. This airport consists of a single asphalt runway identified as 04/22 that is 2,400 feet in length and 40 feet in width (Airport-Data.com, 2011). This is an unattended, family-owned airport with very low use levels (Emory, 2011). For the past two years (2009-2010), the airport has averaged less than 100 aircraft operations (take-off and landing) per year, averaging approximately one aircraft operation every three days (Emory, 2011). This level of use would be unlikely to expose construction or operations personnel to excessive noise levels. However, a Conditional Use Permit is in the final stages of approval, which would extend the runway to 4,000 feet in length and allow for subdivision of the properties north of the runway creating a “fly-in home community”, which the airstrip property owner anticipates will result in a considerable increase in the use of the airport (Emory, 2011). No airfield noise contours have been developed for the Emory Ranch Airport for current operations or future operations. The anticipated increase in use of the Emory Ranch Airport is not expected to occur prior to construction; therefore construction workers would continue to experience limited airport noise. During project operations, use of the Emory Ranch Airport, even with the extended runway and potential increased levels of use, is not anticipated to generate excessive noise levels as the size of the planes would remain fairly small due to the short runway length which cannot accommodate larger, louder airplanes. Furthermore, none of the project alternatives would create residential land uses, and all project features are outside the airfield property. Consequently, airport-related noise issues are not discussed further under any of the alternatives.

4.9.3 Alternative 1: Proposed Action

4.9.3.1 Direct and Indirect Impacts

Effects on the existing ambient noise and vibration levels may arise from project construction, operations and maintenance, and decommissioning equipment and vehicles as well as from the introduction of construction or operations and maintenance-related traffic on local roads near the proposed OWEF site.

Construction

Construction of the proposed OWEF is expected to occur over a period of 18 to 24 months, with the O&M complex taking approximately 8 weeks and the substation complex taking approximately 23 weeks (Pattern, 2010c – DR#3, Q5).In general, the construction team would work six 10-hour days, daylight hours, Monday through Saturday; however, to meet schedule, work may occur early in the morning, evenings, or even nights and/or Sundays during foundation construction, to take advantage of the cooler times of day, and during the turbine erection period, to take advantage of the times when wind speed is below the maximum safe working conditions (Pattern, 2010a – DR#1, Q1-4). Up to 155 employees would be at the site during construction (Pattern, 2010d – DR#4, Q4).

Noise from construction activities would occur both on site and off site during construction. Construction equipment would include graders, bulldozers, backhoes, cranes, delivery trucks, semi trucks, and welding rigs (Pattern, 2010b – DR#2, Q4). Each of these individual pieces of equipment would generate maximum noise levels ranging from 74 to 83 dBA at 50 feet from the source, as shown in Table 4.9-1.

Table 4.9-1. Noise Levels and Usage Factors for Equipment

Equipment List	Equivalent Federal Highway Administration Classification	Acoustical Usage Factor (%)	Measured Lmax (at 50 feet)
Backhoe	Backhoe	40	78
Concrete Batch Plant	Concrete Batch Plant[1]	15	83
Concrete Truck	Concrete Pump Truck	20	81
Large/Medium Crane Forklift	Crane	16	81
Large/Medium Dozer	Dozer	40	82
Excavator	Excavator	40	81
Delivery Trucks Water Trucks	Flat Bed Truck	40	74
Trenching Rig	Front End Loader	40	79
Generator (Lighting)	Generator	50	81
Road Grader	Grader[1]	40	83
Man Lift	Man Lift	20	75
Delivery Trucks	Pickup Truck	40	75
Compaction Roller Sheeps Foot Roller	Roller	20	80
Air Hammer	Pneumatic Tool	50	85

Source: FWHA, 2006; Pattern Energy, 2010a – DR#1, Q1-14; Pattern Energy, 2010b – DR#2, Q4.

Note (1): Spec. 721.560 value used as no actual measured Lmax RCNM default noise emissions level available.

Noise from On-Site Construction Activities

As noted above, development of the wind farm would occur over approximately an 18- to 24-month period, with construction activity undertaken as a rolling sequence of activity on different subareas of the site. Therefore, noise generated during construction at the OWEF site would shift throughout the construction period, such that individual receptors would not be impacted throughout the duration of construction. The noise impacts on the nearest residence from on-site construction were estimated, as shown in Appendix F, for each of the identified construction activities: road construction, foundation construction, and turbine erection. Noise from other construction activities would be expected to generate lower noise levels than these activities. For example, the concrete batch plant, which would be considered a stationary noise source throughout construction although not a permanent project feature, would generate approximately 83 dBA Lmax at 50 feet; however, the property boundary of the closest receptor (Ocotillo Community Park) is located approximately 9,000 feet (1.7 miles) away resulting in a noise level of approximately 30 dBA Leq (1-hour).

On-site construction noise calculations assume all the equipment identified for a specific construction activity would be operating in generally the same area of the OWEF site. The maximum on-site construction noise level was determined to occur during construction of on-site roads, which would result in an estimated noise level of 51 dBA Leq (1-hour) at the property boundary of the closest residence (L1 on Figure 3.10-3) (see Appendix F). Considering average daytime noise levels at this residence of 41 dBA Leq (see Table 3.10-1), construction activities would produce a short-term, increase of up to 10 dBA Leq over the existing ambient noise levels. Construction would produce an estimated noise level of 52 dBA at the boundary of the Jacumba Wilderness Area, where noise levels are anticipated to be around 47 dBA

Leq as the wilderness area borders SR-98 (see Table 3.10-1 location N3). As such, construction activities would produce a short-term, increase of over ambient noise conditions of up to 5 dBA Leq in the Jacumba Wilderness Area. At the boundary of the Anza-Borrego State Park, which is approximately 780 feet immediately west of the closest proposed turbine/road, construction noise levels would be approximately 62 dBA Leq. Ambient noise levels in this area are anticipated to be 35 dBA (consistent with 35 Ldn for wilderness areas); therefore, construction would result in up to a 27 dBA increase in noise levels at the Anza-Borrego State Park boundary. These noise levels would not exceed the Imperial County General Plan Noise Element limit for construction [75 dBA Leq (8-hour)], but would occur outside of the construction hours allowed by the County (7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday). Implementation of BLM's Best Management Practices (BMPs) and Mitigation Measures Noise-1 through Noise-4 would mitigate construction noise impacts during construction of the OWEF (see Section 4.9.10).

Noise from Construction-Related Traffic

Off-site construction noise would be generated by trucks delivering equipment and materials, as well as workers commuting to and from the proposed OWEF site. Roads utilized during construction would include Interstate 8 (I-8), several highways (S80-Evan Hewes Highway, SR-98-Yuha Cutoff, S2-Imperial Highway), a short segment of Shell Canyon Road located 0.7 miles north of the community of Ocotillo, and an existing mine access road. As shown in Table 3.10-3 (Existing Traffic-Generated Noise Levels), typical noise levels along the local highways would range from 58 to 67 dBA CNEL, which is in line with the sample ambient noise measurement of 68 dBA Leq taken at location N4 near SR-98 (see Table 3.10-1, Summary of Ambient Noise Levels). These noise levels already exceed Imperial County General Plan Noise Element limits for residential areas and are considered "normally unacceptable" from a land use compatibility standpoint. At residences located along these roadways, noise levels would temporarily increase during construction due to the additional auto traffic and heavy-duty trucks utilizing these roadways, as shown in Table 4.9-2. The estimated increase in noise levels generated by construction traffic would be 5 dBA or less, and is not considered to be substantial increase over ambient conditions. In addition, the peak one-hour average noise levels (Leq) would not exceed the Imperial County construction noise limit for extended construction of 75 dB Leq (1-hour).

Table 4.9-2. Construction Traffic-Generated Noise Levels

Road Segment	Existing Noise Level, CNEL, 50 feet from road centerline	Existing + Project Construction Noise Level, CNEL, 50 feet from road centerline	Change in Noise CNEL Levels, dBA	Existing + Project Construction, Leq (h) Peak, dBA
W. Evan Hewes Highway, East of Imperial Highway	57.9 dBA	62.9 dBA	+ 5.0	65.3
Imperial Highway, I-8 EB Ramps to SR-98 Yuha Cutoff	59.6 dBA	60.6 dBA	+ 1.0	61.3
SR-98 Yuha Cutoff, West of Imperial Highway	67.1 dBA	67.3 dBA	+ 0.2	66.7

Source: See noise calculations in Appendix F.

Ground Vibrations from Construction Activities

Construction would not involve impact pile driving or blasting; however, the use of large construction equipment may produce short-term groundborne vibration and associated groundborne noise. Typical groundborne vibration generated by heavy equipment attenuates rapidly with distance from the source of the vibration so that potential impact areas are usually confined within short distances (i.e., 200 feet or less) from the source (FTA, 2006). The closest residence is located 2,640 feet (0.5 miles) from the closest project feature and would therefore not be affected by the groundborne vibrations generated on site during construction.

Operation and Maintenance

There would be four potential sources of long-term operational noise during the life of the project: noise from operation of the wind turbines, noise from the substation, noise from on-site maintenance activities, and noise generated off-site from workers commuting to and from the proposed OWEF site. No audible noise would be generated by the electrical collection system as it would be placed underground.

Approximately 17 full-time personnel would be required for year-round operations and maintenance of the OWEF, with up to 10 additional temporary workers/contractors for 12 weeks per year for additional maintenance work (Pattern, 2010d – DR#4, Q8). Vehicles used on site for maintenance purposes would include pick-up trucks, man lifts, truck mounted cranes, forklifts, road grading equipment, 4WD gator, etc. There would be approximately four trips on average per year to each turbine via pickup truck over the course of the 30 year project lifespan. Approximately one trip to 30 percent of the turbines would occur by a truck-mounted crane and fork lift for maintenance. Roads would be re-graded as needed due to sedimentation deposit from storm water runoff (Pattern, 2010d – DR#4, Q10).

Wind Turbines

Several turbine models are being considered as part of the proposed OWEF, including the GE 1.6/2.75 MW and Siemens 2.3/3.0 MW. Of these turbine models, the one that would create the greatest noise levels was determined to be the Siemens 2.3 MW turbine. Based on this turbine model, a wind turbine simulation was prepared by Navcon to predict the operational noise levels at the proposed OWEF site and in the immediate vicinity. The simulation approach assumed Siemens 2.3 MW turbines for all 158 turbines, operating at full load, and operating 24-hours per day (for Ldn determination) to assess the worst case for noise generation by the wind turbines. The SoundPlan 7.0 (Kernel version) simulation software was utilized with International Organization for Standardization (ISO) 9613 as the prediction model, which assumes a downwind condition. Noise levels were calculated at various temperatures and relative humidity, as air absorption changes depending on these environmental conditions, at four of the sensitive receptor locations identified in Figure 3.10-3 (L1 to L4). Table 4.9-3 summarizes the modeling results; detailed results information is provided in Appendix F.

For illustrative purposes, Figures 4.9-1 through 4.9-4 provide the noise contour maps for the four scenarios. As shown in Figure 4.9-1 (Scenario 1), the 40 dBA Leq contour runs through the middle of the northern town center of Ocotillo. As such, some residences would experience noise levels slightly above 40 dBA Leq when temperatures are low and relative humidity is high. Residences in the southern town center of Ocotillo, however, would experience noise levels below 40 dBA Leq under this worst-case scenario. When weather conditions are less severe (i.e., higher temperature and lower relative humidity), as shown in Figures 4.9-2 through 4.9-4, none of the residences in the northern and southern town centers of Ocotillo would experience noise levels above 40 dBA Leq.

Table 4.9-3. Alternative 1 Predicted Worst-Case Noise Levels for OWEF Wind Turbines, dBA

Location	Scenario 1 50°F / 50% Humidity		Scenario 2 68°F / 40% Humidity		Scenario 3 86°F / 10% Humidity		Scenario 4 104°F / 5% humidity	
	Ldn[1]	Leq[2]	Ldn[1]	Leq[2]	Ldn[1]	Leq[2]	Ldn[1]	Leq[2]
L1	49.5	43.1	48.9	42.4	47.1	40.7	45.8	39.4
L2	48.7	42.3	47.9	41.5	46.0	39.6	44.6	38.2
L3	46.2	39.8	45.2	38.8	43.2	36.7	41.6	35.2
L4	44.2	37.8	43.3	36.9	41.4	35.0	39.9	33.5

Source: Navcon, 2011. See Appendix F for complete noise modeling inputs and results.

Notes:

(1) The Ldn or day-night average sound level is equal to the 24-hour equivalent sound level with a 10 dBA penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

(2) The Leq level presented represents the average sound level when all wind turbines are running at 100 percent with the exception of two de-rated turbines.

Per Table 3.10-4 (OSHA-Permissible Noise Exposure Standards), noise levels of 60 dBA Ldn or CNEL would be normally acceptable for compatibility with residential land uses located in unincorporated Imperial County. In addition, as shown in Table 3.10-5, the Imperial County General Plan Noise Element specifies noise level limits at the property line of residential areas of 50 dBA Leq (1-hour) daytime (7 a.m.-10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m.-7 a.m.). As shown in Table 4.9-3, the highest noise levels would occur when weather conditions provide for low temperatures and high relative humidity (Scenario 1), which would generally occur in winter months and at night. These weather conditions would likely occur in the project area less than five percent of the year (Navcon, 2011).

Noise levels at the closest residences were predicted to range from 43.1 to 37.8 dBA Leq. Noise levels generated by the project in the Jacumba Wilderness Area would range from as high as 45 dBA Leq nearest SR-98 and decrease to 35 dBA Leq or less within approximately 5,000 feet (0.95 miles). At the boundary of the Anza-Borrego State Park, operational noise levels would be approximately 50-55 dBA Leq and decrease to 35 dBA Leq or less within approximately 6,400 feet (1.2 miles). Under this worst-case scenario the wind farm would be considered an acceptable land use (<60 dBA Ldn per Table 3.10-5) and noise levels at all sensitive receptors in Imperial County (residences and community park) would meet the Imperial County daytime and nighttime noise limits. Noise levels in these wilderness areas would meet EPA guidelines which recommend an Ldn of 55 dBA to protect the public from the effect of broadband environmental noise in outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (EPA, 1974). Considering ambient noise levels as low as 41 dBA daytime and 30 dBA nighttime, the noise levels produced by the wind turbines during daytime hours would not be noticeable (< 3dBA Leq increase); however at night, these noise levels would result in a substantial increase over nighttime ambient noise levels occurring in the quieter areas (away from highways) and would be perceived as a doubling of loudness (>10 dBA Leq increase). As discussed in Section 3.10.1 (Noise - Environmental Setting), under "General Information on Wind Turbine Noise", a limit of 35 dBA would be consistent with the EPA noise level for no more than "sporadic complaints" and the Pedersen and Waye prediction for community reaction would be just above the "high annoyance threshold for wind turbine noise". Therefore, these noise levels may result in complaints from local residences.

Substation

Substations usually generate steady noise (broadband noise) from the process of power conversion and the operation of auxiliary equipment needed to cool the transformers, including cooling fans and oil pumps; however, the noise generated by the transformer and switchgear display different noise characteristics. Transformer noise contains pure-tone or "hum" components. This tonal quality is typically the most offensive characteristic of transformer noise. Two transformers would be placed approximately 100 feet apart at the proposed substation, each generating noise levels of 86 dBA at the transformer (assume 5 feet). The combined noise level would be approximately 89 dBA. The proposed substation is located approximately 6,336 feet (1.2 miles) from the closest sensitive receptor (Ocotillo Community Park), resulting in noise levels of approximately 27 dBA Leq (1-hour). Noise generated from the transformers at the substation would be well below background noise levels (41-53 dBA daytime away from major highways; 30 dBA nighttime) at the closest sensitive receptor and would meet Imperial County General Plan Noise Element limits [50 dBA Leq (1-hour) daytime (7 a.m.-10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m.-7 a.m.)].

Switchgear noise is generated by the operation of circuit breakers used to break high-voltage connections at 132 kV and above to isolate and protect equipment. An arc formed between the separating contacts has to be "blown out" using a blast of high-pressure gas. The resultant noise is impulsive in character (i.e., loud and of very short duration). The frequency of switchgear activities is based on testing, maintenance, and rerouting requirements, which are specific to each utility company. These operations would occur infrequently, and accordingly, potential impacts of switchgear noise would be temporary and minor in nature (BLM, 2005).

On-Site Maintenance Activities

Regular maintenance activities, such as periodic visits to the wind turbines and substation would involve light- or medium-duty vehicles. These activities would result in short-term elevated noise levels (75 dBA Lmax at 50 feet), but would be a moving source such that the contribution towards the one-hour measured noise level at any single receptor location would be negligible.

Infrequent but noisy maintenance activities would include road maintenance or turbine maintenance. On-site noise levels for these noisy maintenance activities were estimated based on a worse-case scenario of two pieces of equipment operating simultaneously in the same area, as shown in Appendix F. Noise levels were estimated at approximately 47 dBA Leq (1-hour) at 2,640 feet, which is the closest distance between a project feature (road and/or wind turbine) and a residence (Location L1 shown on Figure 3.10-3). These activities would result in short-term noticeable increases in ambient noise levels and would exceed the Imperial County General Plan Noise Element limits for operations [50 dBA Leq (1-hour) daytime (7 a.m.-10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m.-7 a.m.) at residential property lines] if occurring during nighttime hours. However, these activities would only occur intermittently (road maintenance as needed, turbine maintenance once every approximately three years), would be of short duration, and would move throughout the proposed OWEF site as maintenance needs are identified, such that it is unlikely these elevated noise levels would impact any one residence for more than a few hours per year. Considering these factors, road maintenance and turbine maintenance activities exhibit characteristics closer to construction than long-term operations; therefore, the Imperial County General Plan Noise Element limit for construction would more appropriately apply, which limits noise levels to 75 dBA Leq

(8-hour) and limits the hours of these activities to 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. To ensure these hours are observed when these types of O&M activities are occurring in close proximity to occupied residences and there is the potential to exceed the Imperial County General Plan Noise Element limits, Mitigation Measure Noise-5 (*Limit Hours of Road and Turbine Maintenance Activities*) is recommended (see Section 4.9.10).

Use of light- or medium-duty vehicles, as well as construction equipment for road and turbine maintenance, would generate some groundbourne vibration. As discussed above, typical groundborne vibration generated by heavy equipment attenuates within 200 feet or less from the source (FTA, 2006). The closest residence is located 2,640 feet (0.5 miles) from a project feature (road and/or wind turbine) and would therefore not be affected by the groundborne vibrations generated during O&M activities.

Off-Site Worker Traffic

Traffic associated with project operations would generally consist of the 17 workers traveling to and from the site each day with an additional 10 temporary workers/contractors during the peak of O&M activities. This would result in an additional 54 trips (27 roundtrips) on the local roadways and highways, which do not occur under existing conditions. Along Evan Hewes Highway, existing noise levels have been estimated at 58 dBA CNEL (see Appendix F). With the additional trips generated by the proposed OWEF, noise levels would increase by less than one decibel, which would not be perceptible.

Decommissioning

The expected life of the proposed OWEF is 30 years. In the event that the site should be removed from power generation service, it would be made suitable for reclamation. All equipment, buildings, concrete foundations, etc. would be removed from the site, with the exception of the utility switchyard. Decommissioning activities for turbine removal would occur over approximately ten months.

Noise from On-Site Decommissioning Activities

Equipment to be utilized on the proposed OWEF site would be similar to those used during construction including: crane, excavator, and air hammer (to break up concrete foundation pedestals) (Pattern, 2010a – DR#1, Q1-5). As such, decommissioning activities would generate a temporary and localized increase in ambient noise levels. These noise levels would be similar to but less than those generated during construction as the activities would be less intense and of shorter duration. Implementation of BLM's BMPs and Mitigation Measures Noise-1 through Noise-4 would reduce noise impacts from decommissioning.

Noise from Traffic Associated with Decommissioning

Traffic volumes associated with decommissioning activities would likely be similar to traffic volumes associated with construction activities. However, because decommissioning would occur at least 30 years in the future, it is likely that vehicle engine technology would be different from current technology. Engine technologies that do not rely on internal combustion engines would likely generate lower noise levels than those produced by current vehicles. This effect is already apparent with hybrid vehicles. Consequently, noise impacts from traffic associated with decommissioning activities would likely be somewhat less than the noise levels estimated for construction-related traffic, which were determined to result in an increase of less than one decibel over ambient conditions, which would not be perceptible.

Ground Vibrations from Decommissioning Activities

Ground vibrations generated during decommissioning of the wind farm would be similar to those previously discussed with respect to construction activities. As with construction, decommissioning activities would require the use of large construction equipment which may produce short-term groundborne vibration and associated groundborne noise. Typical groundborne vibration generated by heavy equipment attenuates rapidly with distance from the source of the vibration so that potential impact areas are usually confined within short distances (i.e., 200 feet or less) from the source (FTA, 2006). The closest residence is located 2,640 feet (0.5 miles) from the closest project feature and would therefore not be affected by the groundborne vibrations generated on site during decommissioning.

4.9.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.9.2. Only those significance criteria which were determined in Section 4.9.2 to be relevant to the project are addressed below.

- **NZ-1.** Per Table 3.10-5 (Guidelines for Land Use Compatibility), noise levels of 60 dBA Ldn or CNEL would be normally acceptable for compatibility with residential land uses located in unincorporated Imperial County. In addition, as shown in Table 3.10-6 (Property Line Noise Limits), the Imperial County General Plan Noise Element specifies noise level limits at the property line of residential areas of 50 dBA Leq (1-hour) daytime (7 a.m.-10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m.-7 a.m.); however, when the ambient noise level is equal to or exceeds the Property Line noise standard, the increase of the existing or proposed noise shall not exceed 3 dB Leq.

  Construction. The maximum on-site construction noise level was determined to occur during construction of on-site roads, resulting in an estimated noise level of 51 dBA Leq (1-hour) at the property boundary of the closest residence (L1 on Figure 3.10-3 in Appendix F) (see Appendix F). Considering average daytime noise levels at this residence of 41 dBA Leq (see Table 3.10-1, Summary of Ambient Noise Levels), construction activities would produce a short-term increase over the existing ambient noise levels (10 dBA). These noise levels would not exceed the Imperial County General Plan Noise Element limit for construction [75 dBA Leq (8-hour)], but would occur outside of the construction hours allowed by the County (7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday), which would result in a significant impact. Implementation of BLM's BMPs and Mitigation Measures Noise-1 through Noise-4 would reduce construction noise impacts, such that on-site construction noise would be less than significant under Criterion NZ-1. Off-site construction noise would be generated by trucks delivering equipment and materials, as well as workers commuting to and from the proposed OWEF site, which would result in an increase in noise levels for residences living along the travel routes. Noise levels along these roadways already exceed Imperial County General Plan Noise Element limits for residential areas and are considered "normally unacceptable" from a land use compatibility standpoint. As shown in Appendix F, noise levels would increase by less than 1 dB Leq with implementation of the Proposed Action, and as such would meet Imperial County noise limits. Therefore, off-site construction noise would be less than significant under Criterion NZ-1.

Operations and Maintenance. Noise levels generated by the wind turbines under the worst-case scenario (low temperature and high relative humidity - Scenario 1) at the closest residences were predicted to range from 49.5 to 45.8 dBA Ldn or 43.1 to 37.8 dBA Leq. Under this worst-case scenario the wind farm would be considered an acceptable land use (<60 dBA Ldn per Table 3.10-5) and all sensitive receptors would meet the Imperial County daytime and nighttime noise limits (50 dBA 1-hour Leq daytime and 45 dBA 1-hour Leq nighttime per Table 3.10-6). Therefore, under Criterion NZ-1, impacts would be less than significant. Noise levels generated by the project in the Jacumba Wilderness Area would range from as high as 45 dBA Leq nearest SR-98 and decrease to 35 dBA Leq or less within approximately 5,000 feet (0.95 miles). At the boundary of the Anza-Borrego State Park, operational noise levels would be approximately 50-55 dBA Leq and decrease to 35 dBA Leq or less within approximately 6,400 feet (1.2 miles). Noise levels in these wilderness areas would meet EPA guidelines which recommend an Ldn of 55 dBA to protect the public from the effect of broadband environmental noise in outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (EPA, 1974).

The proposed substation is located approximately 6,336 feet (1.2 miles) from the closest sensitive receptor (Ocotillo Community Park), resulting in noise levels of approximately 27 dBA Leq (1-hour), which would meet Imperial County noise limits and be below existing ambient noise levels. Switchgear operations at the substation would occur infrequently, and accordingly, potential impacts of switchgear noise would be temporary and minor in nature. As such, substation operations would result in a less-than-significant impact under Criterion NZ-1.

Regular maintenance activities, such as periodic visits to the wind turbines and substation, would result in short-term elevated noise levels (75 dBA Lmax at 50 feet), but would be a moving source such that the contribution towards the one-hour measured noise level at any single receptor location would be less than significant. Infrequent but noisy maintenance activities would include road maintenance or turbine maintenance. Noise levels were estimated at approximately 47 dBA Leq (1-hour) at 2,640 feet (0.5 miles), which is the closest distance between a Project feature (road and/or wind turbine) and a residence (Location L1 on Figure 3.10-3, Ambient Noise Measurement Locations).This would exceed the Imperial County noise limits during nighttime hours; however, these activities would only occur intermittently (road maintenance as needed, turbine maintenance once every approximately three years), would be of short duration, and would move throughout the proposed OWEF site as maintenance needs are identified, such that it is unlikely these elevated noise levels would impact any one residence for more than a few hours per year. Considering these factors, road maintenance and turbine maintenance activities exhibit characteristics closer to construction than long-term operations; therefore, the Imperial County General Plan Noise Element limits for construction would more appropriately apply, which limit noise levels to 75 dBA Leq (8-hour) and limit the hours of these activities to 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. If these types of O&M activities were to occur outside these time periods, impacts would potentially be significant. To ensure Imperial County's construction hours are observed when these types of O&M activities are occurring in close proximity to occupied residences and there is the potential to exceed the Imperial County General Plan Noise Element noise level limits, Mitigation Measure Noise-5 (*Limit Hours of Road and Turbine Maintenance Activities*) is recommended. As such, on-site maintenance activities would be less than significant under Criterion NZ-1. Furthermore, off-site traffic associated with project operations would be minimal, would not result in a perceptible increase in noise levels (< 3 dB Leq) resulting in a less-than-significant noise impact under Criterion NZ-1.

Use of light- or medium-duty vehicles, as well as construction equipment for road and turbine maintenance, would generate some groundbourne vibration. As discussed above, typical groundborne vibration generated by heavy equipment attenuates within 200 feet or less from the source (FTA, 2006). The closest residence is located 2,640 feet (0.5 miles) from a project feature (road and/or wind turbine) and would therefore not be affected by the groundborne vibrations generated during O&M activities.

Decommissioning. Activities associated with decommissioning would generate a temporary and localized increase in ambient noise levels. These noise levels would be similar to but less than those generated during construction as the activities would be less intense and of shorter duration. Similarly, traffic volumes associated with decommissioning activities would likely be similar to traffic volumes associated with construction activities. However, because decommissioning would occur at least 30 years in the future, it is likely that vehicle engine technology would improve from current technology resulting in lower noise levels than those produced by current vehicles. Consequently, noise impacts from traffic associated with decommissioning activities would likely be somewhat less than the noise levels estimated for construction-related traffic, which were determined to be less than significant (see above "Construction" discussion). As with construction, most of the decommissioning activities would occur during the day when increased noise levels are generally tolerated better because of the masking effect of background noise. Implementation of BLM's BMPs and Mitigation Measures Noise-1 through Noise-4 would reduce potentially significant noise impacts during decommissioning such that impacts would be less than significant under Criterion NZ-1.

- **NZ-2.** Groundborne vibration or noise levels from construction or decommissioning activities would pose no risk of cosmetic damage to any existing buildings. Operational activities at the wind farm would not generate meaningful ground vibrations. Consequently, ground vibration impacts from wind farm construction, operations and maintenance, and decommissioning would be less than significant.
- **NZ-3. Operations and Maintenance.** Noise levels generated by the proposed wind turbines under the worst-case scenario (low temperature and high relative humidity – Scenario 1) at the closest residences were predicted to range from 43.1 to 37.8 dBA Leq (see Table 4.9-2). Considering average ambient noise levels as low as 41 dBA daytime and 30 dBA nighttime, the noise levels produced by the wind turbines during daytime hours would not be noticeable (< 3dBA Leq increase), and would therefore be less than significant. However, at night in areas located away from highways, these noise levels would be perceived as a doubling of loudness (>10 dBA Leq increase). Furthermore, as discussed in Section 3.10.1 (Noise – Environmental Setting), under "General Information on Wind Turbine Noise," a limit of 35 dBA would be consistent with the EPA noise level for no more than "sporadic complaints" and the Pedersen and Waye prediction for community reaction would be just above the "high annoyance threshold for wind turbine noise". As such, these noise levels may result in widespread complaints from local residences. Therefore, the increase in ambient noise levels in the project area would result in a significant and unavoidable impact under Criterion NZ-3.

Noise levels generated by the project in the Jacumba Wilderness Area would range from as high as 45 dBA Leq nearest SR-98 and decrease to 35 dBA Leq or less within approximately 5,000 feet (0.95 miles). This is within the range of ambient noise levels in this area, which are highly affected by the use of SR-98. At the boundary of the Anza-Borrego Desert State Park, operational noise levels would be approximately 50-55 dBA Leq and decrease to 35 dBA Leq or less within approximately 6,400 feet (1.2 miles). As such, operational noise levels would result in a significant increase (>10 dBA Leq) in ambient noise levels within those areas of Anza-Borrego Desert State Park that border the OWEF site (within 1.2 miles).

The proposed substation is located approximately 6,336 feet (1.2 miles) from the closest sensitive receptor (Ocotillo Community Park), resulting in noise levels of approximately 27 dBA Leq (1-hour), which would fall below existing ambient noise levels. Switchgear operations at the substation would occur infrequently, and accordingly, potential increases in ambient noise levels would be temporary and minor in nature. As such, substation operations would result in a less-than-significant impact under Criterion NZ-3.

Regular maintenance activities, such as periodic visits to the wind turbines and substation, would result in short-term elevated noise levels (75 dBA Lmax at 50 feet), but would be a moving source such that the contribution towards the one-hour measured noise level at any single receptor location would be less than significant. Infrequent but noisy maintenance activities would include road maintenance or turbine maintenance. Noise levels were estimated at approximately 47 dBA Leq (1-hour) at 2,640 feet (0.5 miles) for road maintenance (worst-case), which is the closest distance between a project feature (road and/or turbine) and a residence (Location L1 shown on Figure 3.10-3). These activities would result in short-term noticeable increases in ambient noise levels and would exceed the Imperial County General Plan Noise Element limits for operations [50 dBA Leq (1-hour) daytime (7 a.m.-10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m.-7 a.m.) at residential property lines] if occurring during nighttime hours. However, these activities would only occur intermittently (road maintenance as needed, turbine maintenance once every approximately three years), would be of short duration, and would move throughout the proposed OWEF site as maintenance needs are identified, such that it is unlikely these elevated noise levels would impact any one residence for more than a few hours per year. Considering these factors, road maintenance and turbine maintenance activities exhibit characteristics closer to construction than long-term operations; therefore the Imperial County General Plan Noise Element limit for construction would more appropriately apply, which limits noise levels to 75 dBA Leq (8-hour) and limits the hours of these activities to 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. If these types of O&M activities were to occur outside these time periods, impacts would be significant. To ensure Imperial County's construction hours are observed when these types of O&M activities are occurring in close proximity to occupied residences and there is the potential to exceed the Imperial County General Plan Noise Element limits, Mitigation Measure Noise-5 (*Limit Hours of Road and Turbine Maintenance Activities*) is recommended. As such, on-site maintenance activities would be less than significant under Criterion NZ-3. Furthermore, off-site traffic associated with project operations would be minimal and would not result in a perceptible increase in noise levels (< 3 dBA Leq) resulting in a less-than-significant noise impact under Criterion NZ-3.

- **NZ-4. Construction.** The maximum on-site construction noise level was determined to occur during construction of on-site roads, which would result in an estimated noise level of 51 dBA Leq (1-hour) at the closest residence (Location L1 shown on Figure 3.10-3) (see Appendix F). Considering average daytime noise levels at this residence of 41 dBA Leq (see Table 3.10-1, Summary of Ambient Noise Levels), construction activities would produce a short-term increase over the existing ambient noise levels (10 dBA), which would be significant. Construction would produce an estimated noise level of 52 dBA at the boundary of the Jacumba Wilderness Area, where noise levels are anticipated to be around 47 dBA Leq as the wilderness area borders SR-98 (see Table 3.10-1 location N3). As such, construction activities would produce a noticeable short-term, increase of over ambient noise conditions; however, this increase would be less than significant (<10 dBA Leq) in the Jacumba Wilderness Area. At the boundary of the Anza-Borrego Desert State Park, construction noise levels would be approximately 62 dBA Leq. Ambient noise levels in this area are anticipated to be 35 dBA (consistent with 35 Ldn for wilderness areas); therefore, construction would result in a significant increase (>10 dBA Leq) in ambient noise levels at the Anza-Borrego Desert State Park boundary. Implementation of BLM's BMPs and Mitigation Measures Noise-1 through Noise-4 would reduce construction noise impacts, such that on-site construction noise would be less than significant under Criterion NZ-4. For residences living along the roadways utilized for construction traffic, noise levels would temporarily increase; however, this increase would be less than one decibel (see Appendix F), and as such would not be a noticeable increase over existing ambient conditions. Therefore, off-site construction noise impacts would be less than significant for Criterion NZ-4.

  Decommissioning. Activities associated with decommissioning would generate a temporary and localized increase in ambient noise levels resulting in a significant impact. These noise levels would be similar to but less than those generated during construction, as the activities would be less intense and of shorter duration. Similarly, traffic volumes associated with decommissioning activities would likely be similar to traffic volumes associated with construction activities. Implementation of BLM's BMPs and Mitigation Measures Noise-1 through Noise-4 would reduce temporary noise impacts during decommissioning such that impacts would be less than significant under Criterion NZ-4.

4.9.4 Alternative 2: 137 Wind Turbine Generators

4.9.4.1 Direct and Indirect Impacts

Alternative 2 is conceptually similar to the Proposed Action (Alternative 1); however, 21 fewer WTGs would be constructed and operated under this alternative.

Construction

The turbines eliminated under Alternative 2 are sited in areas located away from sensitive receptors; therefore, construction noise and vibration impacts to sensitive receptors for Alternative 2 would not change and would be identical to Alternative 1. However, since construction of Alternative 2 would include fewer WTGs, the duration of construction noise impacts would occur over a shorter period of time as compared to Alternative 1.

Operation and Maintenance

Operations and maintenance of Alternative 2 would be similar to Alternative 1; however, with the elimination of 21 wind turbines, operational noise from the WTGs would be reduced slightly. As shown in Table 4.9-4 (on the following page), which provides a comparison of Alternatives 1 and 2 for the worst-case modeled scenario (Scenario 1, 50°F/50% Humidity), the decrease in noise levels would be less than one decibel. As such, the change in operational noise levels would not be perceptible (< 3 dBA); therefore, impacts would be basically the same as described for Alternative 1. O&M impacts would also be identical to Alternative 1, which would be minimized with implementation of Mitigation Measure Noise-5 (*Limit Hours of Road and Turbine Maintenance Activities*).

Any potential for groundbourne noise and vibrations from use of light- or medium-duty vehicles, as well as construction equipment for road and turbine maintenance, would be identical under Alternative 2 compared to Alternative 1. As previously discussed, typical groundborne vibration generated by heavy equipment attenuates within 200 feet or less from the source (FTA, 2006); therefore, residences would not be affected by the groundborne vibrations during O&M activities.

Table 4.9-4. Alternative 2 Predicted Worst- Case Noise Levels for OWEF Wind Turbines Compared to Alternative 1, dBA

Location	Alternative 1 Scenario 1 50°F / 50% Humidity		Alternative 2 Scenario 1 50°F / 50% Humidity		Change in Noise Level	
	Ldn	Leq	Ldn	Leq	Ldn	Leq
L1	49.5	43.1	49.3	42.9	-0.2	-0.2
L2	48.7	42.3	48.7	42.3	0	0
L3	46.2	39.8	46.0	39.6	-0.2	-0.2
L4	44.2	37.8	43.4	37.0	-0.8	-0.8

Source: Navcon, 2011. See Appendix F for complete noise modeling inputs and results.
Note: Noise levels estimated for wind turbines only, not including background noise levels.

Decommissioning

The turbines eliminated under Alternative 2 are sited in areas located away from sensitive receptors; therefore, decommissioning noise and vibration impacts on sensitive receptors for Alternative 2 would not change and would be identical to Alternative 1. However, since there are fewer WTGs, decommissioning could be completed within a shorter period of time as compared to Alternative 1 thereby reducing the overall duration of noise impacts.

4.9.4.2 CEQA Significance Determinations

The CEQA significance determinations for noise and vibration impacts for Alternative 2 would be identical to Alternative 1.

4.9.5 Alternative 3: 105 Wind Turbine Generators

4.9.5.1 Direct and Indirect Impacts

Alternative 3 is conceptually similar to the Proposed Action (Alternative 1); however, 53 fewer WTGs would be constructed and operated under this alternative. The turbines eliminated under this alternative include all those at Site 2 (16), all those in the northeast portion of Site 1 (22), a couple near and the one on the private parcel (3), and several along the perimeter of the project in the northeast portion of Site 1 (12).

Construction

The turbines eliminated under Alternative 3 include many located near the unincorporated community of Ocotillo and those located near Nomirage at Site 2. As such, construction activities would be occurring farther away from residences. For example, under Alternative 1 the closest residence to a project element (road and/or wind turbine) would be located 0.5 miles away, whereas under Alternative 3 this distance increases to 0.65 miles. As such, the estimated noise level associated with the construction of on-site roads at the property boundary of the closest residence (L1 on Figure 3.10-3) would decrease from 51 to 49 dBA Leq (1-hour). Considering average daytime noise levels at this residence of 41 dBA Leq (see Table 3.10-1, Summary of Ambient Noise Levels), unmitigated construction activities under Alternative 3 would not result in a substantial increase over the existing ambient noise levels (<10 dBA), unlike Alternative 1. Same as Alternative 1, these noise levels would not exceed the Imperial County General Plan Noise Element limit for construction (75 dBA Leq [8-hour]); however, construction activities would occur outside of the construction hours allowed by the County (7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday). Implementation of BLM's BMPs and Mitigation Measures Noise-2 through Noise-4 (Mitigation Measure Noise-1 would not apply since no construction would be occurring within 3,000 feet of residential or recreational areas) would reduce construction noise impacts associated with Alternative 3 to the extent feasible. Therefore, construction noise and vibration impacts to sensitive receptors for Alternative 3 would be minimal. Furthermore, construction of Alternative 3 would include fewer WTGs such that the duration of noise impacts would occur over a shorter period of time than Alternative 1.

Operation and Maintenance

Operations and maintenance of Alternative 3 would be similar to Alternative 1; however, with the elimination of wind turbines near sensitive receptors the operational noise from the WTGs would be noticeably reduced compared to Alternative 1 at several of the closest receptors. As shown in Table 4.9-5, which provides a comparison of Alternatives 1 and 3 for the worst-case modeled scenario (Scenario 1, 50°F/50% Humidity), noise levels at locations L1, L3, and L4 (see Figure 3.10-3, Ambient Noise Measurement Locations, in Appendix A) would be reduced by more than 3 dBA Leq. Figure 4.9-5 provides the noise contour map for Scenario 1.

Table 4.9-5. Alternative 3 Predicted Worst-Case Noise Levels for OWEF Wind Turbines Compared to Alternative 1, dBA

Location	Alternative 1 Scenario 1 50°F / 50% Humidity		Alternative 3 Scenario 1 50°F / 50% Humidity		Change in Noise Level	
	Ldn	Leq	Ldn	Leq	Ldn	Leq
L1	49.5	43.1	44.4	38.0	-5.4	-5.4
L2	48.7	42.3	46.3	39.9	-2.6	-2.5
L3	46.2	39.8	39.6	33.2	-6.2	-6.2
L4	44.2	37.8	<32	<26	-19.6	-19.6

Source: Navcon, 2011. See Appendix F for complete noise modeling inputs and results.

Note: Noise levels estimated for wind turbines only, not including background noise levels. The prediction for L4 does not find any wind turbines as none are located within the 4,000 meters (2.5 miles) considered.

Considering average ambient noise levels as low as 41 dBA daytime and 30 dBA nighttime, the noise levels produced by the wind turbines during daytime hours under Alternative 3 would not be noticeable (less than 41 dBA Leq); however, at night these noise levels would be noticeable and could be perceived as a doubling of loudness (up to 9.9 dBA Leq increase). As discussed in Section 3.10.1, under "General Information on Wind Turbine Noise", a limit of 35 dBA would be consistent with the EPA noise level for no more than "sporadic complaints" and the Pedersen and Waye prediction for community reaction would be just above the "high annoyance threshold for wind turbine noise". As shown in Figure 4.9-5, very few residences would be located in areas with greater than 35 dBA Leq. The majority of the unincorporated community of Ocotillo would experience noise levels from the wind turbines of less than 35 dBA Leq, and Nomirage would no longer be impacted under Alternative 3.

Noise levels associated with maintenance activities, include road maintenance or turbine maintenance, also would decrease compared to Alternative 1 as a result of project elements being located farther away from sensitive receptors. For Alternative 1, the worst-case on-site noise level for maintenance activities was estimated to be 47 dBA Leq (1-hour) at the closest residence (Location L1 shown on Figure 3.10-3); however, under Alternative 2 this noise level would decrease slightly to 45 dBA Leq (1-hour). As such, these activities would continue to result in short-term noticeable increases in ambient noise levels (> 3 dBA) under Alternative 3. However, these noise levels would no longer exceed the Imperial County General Plan Noise Element limits for operations [50 dBA Leq (1-hour) daytime (7 a.m.-10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m.-7 a.m.) at residential property lines], unlike Alternative 1 which would exceed these limits if maintenance activities were occurring during nighttime hours. As such, Mitigation Measure Noise-5 is unnecessary under Alternative 3.

Any potential for groundborne noise and vibrations from use of light- or medium-duty vehicles, as well as construction equipment for road and turbine maintenance, would be reduced under Alternative 3 compared to Alternative 1 as the closest residence is located farther away (0.65 miles vs. 0.5 miles). As previously discussed, typical groundborne vibration generated by heavy equipment attenuates within 200 feet or less from the source (FTA, 2006); therefore, residences would not be affected by the groundborne vibrations during O&M activities.

Decommissioning

The turbines eliminated under Alternative 3 include many located near the unincorporated community of Ocotillo and those located near Nomirage at Site 2. As such, decommissioning activities would be occurring farther away from sensitive receptors. Similar to the discussion above for construction, decommissioning noise and vibration impacts on sensitive receptors for Alternative 3 would be less than Alternative 1. Furthermore, since there are fewer WTGs, decommissioning could be completed within a shorter period of time as compared to Alternative 1, thereby reducing the overall duration of noise impacts.

4.9.5.2 CEQA Significance Determinations

The CEQA significance determinations of noise and vibration impacts for Alternative 3 would generally be identical to Alternative 1, with the exception of operational impacts. Operational noise from the wind turbine generators (Criterion NZ-3) would continue to result in a significant impact under Alternative 3 within the unincorporated community of Ocotillo; however, the project would no longer affect the community of Nomirage as a result of the elimination of wind turbines at Site 2. In addition, O&M activities would occur farther away from residences, due to project elements being sited farther away from residence, such that noise impacts would be less than significant.

4.9.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.9.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment), the land on which the project is proposed would become available to other uses that are consistent with BLM's CDCA plan, including another renewable energy project. The project would not be constructed; no construction activities would occur; and, there would be no project-related effects on ambient noise and vibration. If the proposed project is not approved, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Several dozen wind and solar development applications for use of BLM land have been submitted for approximately one million acres of the California Desert Conservation Area. Additional BLM land in Nevada and Arizona also has applications for wind and solar projects. Construction and operation noise and vibration impacts would occur at these other sites when they are developed. While wind energy development on non-federal lands is subject to a wide array of environmental reviews and approvals by virtue of state and local permitting processes, they may not be subject to NEPA requirements if federal funding or permitting is not required for the other project(s).

4.9.6.2 CEQA Significance Determinations

Alternative 4 would not result in project-related noise or vibration impacts as the project would not be built; however, noise and vibration impacts from other projects, including another renewable energy project, being developed could result in similar impacts.

4.9.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.9.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no project-related action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to noise and vibration would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. While no impacts associated with the proposed OWEF would occur at the project site, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Impacts would occur at these other sites when they are developed.

4.9.7.2 CEQA Significance Determinations

Alternative 5 would not result in project-related noise or vibration impacts as the project would not be built; however, noise and vibration impacts from other projects being developed could result in similar impacts.

4.9.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.9.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No noise impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, similar impacts related to noise and vibration as those described for the proposed OWEF could occur. The majority of noise impacts would be expected to be less than significant with implementation of similar mitigation measures (see Mitigation Measures Noise-1 through Noise-5 in Section 4.9.10, below); however, operational noise impacts from the wind turbines could result in unavoidable adverse impacts on the communities of Ocotillo and Nomirage.

4.9.8.2 CEQA Significance Determinations

Alternative 6 would not result in project-related noise or vibration impacts as the project would not be built; however, noise and vibration impacts from a future wind project would be expected to result in impacts similar to the proposed OWEF with implementation of similar mitigation measures.

4.9.9 Cumulative Impacts

4.9.9.1 Geographic Extent/Context

Noise. The geographic extent for the analysis of cumulative impacts related to noise is generally limited to areas within approximately one mile of the proposed OWEF site, including along the haul truck routes. This area is defined as the geographic extent of the cumulative noise impact area because noise impacts would generally be localized. At distances greater than one mile, impulse noise may be briefly audible and steady construction and/or operational noise would generally dissipate such that the level of noise would blend in with background noise levels. Noise in the project area has increased over time as development of the area has occurred, including installation of major highways, development of communities such as Ocotillo and Nomirage, installation of military facilities, and use of the area for off-highway vehicle (OHV) recreational activities. These developments have changed the quiet desert of the project area such that ambient noise levels existing today are substantially higher than would have occurred prior to such development, especially during daytime hours when traffic and human activity are greatest.

Vibration. Ground vibration impacts of the project stem primarily from temporary on-site construction activities. Ground vibrations dissipate more rapidly than airborne noise levels, limiting the geographic extent of ground vibration to the immediate vicinity of the vibration source. As noted in Section 3.10.1

(Noise – Environmental Setting) under "General Information on Vibration", the geographic extent of potentially significant ground vibrations seldom extends more than a few hundred feet from the source of the vibrations. Vibration in the project area has increased over time with development of features such as railroad tracks, highways, and roads, where use of this infrastructure by trains, trucks, cars, etc. generate localized vibrations.

4.9.9.2 Existing Cumulative Conditions

Current ambient noise conditions reflect the cumulative effect of noise generation on a local geographic scale. Existing noise levels in the project vicinity are generally low, except along the local highways (Imperial Highway, I-8, Evans Hewes Highway, and SR-98), when airplanes (associated with Emory Ranch Airport and the R-2510 complex operations) pass through the area, or on weekends when OHV activities are more prevalent.

4.9.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR.

Most of the projects listed in Table 4.1-1 are too far from the proposed OWEF site to result in combined noise impacts. The projects that are located within the geographic area of effect for cumulative impacts are presented in Table 4.1-2 and listed below:

- Coyote Wells Specific Plan
- Sunrise Powerlink
- Ketchum Ranch
- ESJ Wind Project I
- ESJ Wind Project II
- Imperial Valley Solar – Solar Two
- Imperial Solar Energy Center West
- Mt. Signal
- Centinela Solar
- Imperial Solar Energy Center South
- Renewergy LLC wind testing
- SDG&E Photovoltaic Solar Field

The Sunrise Powerlink would result in the construction and operation of a transmission line that passes directly through the proposed OWEF site in generally a north-south direction. The Coyote Wells Specific Plan is located within one mile of the proposed OWEF site boundary and would result in the development of a gated community, law enforcement training facility, and motorsports facility, along with accessory commercial uses. The other projects listed above (and in Table 4.1-2) could also contribute to traffic along the local highways (I-8, Evans Hewes Highway, and/or SR-98) and result in a potential cumulative traffic noise impact.

4.9.9.4 Construction

Installation of the met towers for the Renewergy LLC wind testing project, which would be located immediately east of the OWEF site, would be completed prior to construction of the proposed OWEF.

Similarly, construction of the Sunrise Powerlink transmission line in the Ocotillo area will also be complete. Therefore, no cumulative construction noise impacts would occur related to these projects. For the following projects, the timeframe for construction is unknown at this time due to the projects being on hold, including Ketchum Ranch, Mt. Signal, and Imperial Valley Solar – Solar Two. In addition, for SDG&E's Proposed Photovoltaic Solar Field (CACA-051625) a draft Plan of Development was submitted in December 2010 and is in review by Imperial County, such that information on the construction schedule is not available. It is assumed that these projects would not result in cumulative construction noise impacts as it is unlikely they would be constructed concurrently with construction of the proposed OWEF.

The Coyote Wells Specific Plan would take nine years to fully implement with construction of Phase I anticipated to begin in Fall 2011 with completion in Summer 2012; Phase II is anticipated to begin in Summer 2015 with completion in Spring 2016; and Phase III is anticipated to being in Summer 2018 with completion in Fall 2019 (Wind Zero, 2010). As such, construction of Phase I of the Coyote Wells Specific Plan is expected to occur concurrently with the OWEF. The closest OWEF feature to the Coyote Wells Specific Plan boundary would be located approximately 1.4 miles east and would be located too far away to result in cumulative impacts from on-site construction activities. No other projects within Table 4.1-2 for Noise have been identified that would have the potential to result in cumulative construction impacts resulting from on-site construction; therefore, no cumulative impacts would occur from on-site project construction. Construction of the OWEF, however, would cause a minor short-term increase in traffic along local highways, including the I-8, SR-98, and Imperial Highway which would have the potential to combine with traffic generated by the Coyote Wells Specific Plan. As such, the proposed OWEF would contribute to short-term cumulative traffic noise impacts along portions of SR-98 and Imperial Highway.

Construction of the ESJ Wind Project I and ESJ Wind Project II, which are located approximately 7 to 10 miles south of the OWEF, respectively, are anticipated to be constructed between 2011 and May 2013. Imperial Solar Energy Center West and Imperial Solar Energy Center South projects, which are located approximately 10 to 20 miles east of the OWEF, respectively, are anticipated to begin in September 2011 and would last approximately 17 months (Imperial County & BLM, 2010a & 2010b). The Centinela Solar Project, which would be located southwest of El Centro near the Mexican border, is expected to be completed by 2013 (110 MW) with an expansion completed by 2014 (30 MW) (CPUC, 2011). As such, construction of these projects could take place concurrently with the OWEF. These projects would utilize I-8, SR-98, and/or Imperial Highway as common access routes for construction worker traffic and equipment and materials deliveries, which could result in a cumulative construction traffic noise impact. Existing traffic on I-8 east of Ocotillo is 18,300 vehicles per day (assumes year 2015 traffic volumes as this more closely relates to current-day conditions than year 1990, provided in Table 3.10-2). Traffic volumes on this portion of I-8 would need to be doubled to cause even a perceptible increase in noise levels (3 dBA), which is not likely to occur as a result of these projects. Existing traffic on Imperial Highway between I-8 and SR-98 (Yuha Cutoff) is estimated to be 250 vehicles per day by 2012 (see Table 3.10-3). Existing traffic on SR-98 (Yuha Cutoff) west of Imperial Highway is estimated to be 1,200 vehicles per day by 2012 (see Table 3.10-3) and up to 6,100 vehicles per day east of Ocotillo (see Table 3.10-2 for year 2015). Again, traffic volumes along these roadways would need to double to even cause a perceptible increase in noise levels (3 dBA). While it is unlikely the combined traffic volumes would result in a perceivable increase in noise levels on SR-98 east of Ocotillo, it is possible a cumulative noise impact would occur on Imperial Highway between I-8 and SR-98 and on SR-98 west of Imperial Highway.

4.9.9.5 Operation and Maintenance

Operation of the Sunrise Powerlink transmission line would result in corona noise, which is heard as a crackling or hissing sound, and would combine with the operational noise of the OWEF. Audible corona noise from the transmission line would cause a substantial permanent increase in ambient noise levels of more than 5 dBA; however, only noise-sensitive receptors within 500 feet of the transmission line would be affected (CPUC, 2008). Within the project area, no residences are located within 500 feet of the transmission line. As such, the corona noise levels from the Sunrise Powerlink transmission line would dissipate before reaching any residences and would not combine with the operational noise of the OWEF.

Noise from routine inspection and maintenance of the Sunrise Powerlink transmission line, including insulator washing, access road repair, and emergency response, would involve occasional helicopter, truck, or earthmoving equipment activity along the ROW. Inspection and maintenance noise would be intermittent over the life of the transmission line, occurring at least once a year and more often where insulator washing and vegetation management would be needed. Because maintenance activities would involve noise at levels similar to transmission line construction, helicopters and other equipment would periodically cause a substantial increase in ambient noise levels. These noise levels would combine with the long-term operational noise produced by the OWEF to create a cumulative impact. Furthermore, it is unlikely that inspection and maintenance activities associated with the Sunrise Powerlink transmission line would occur at the same time as road and turbine maintenance at the proposed OWEF site or in the same area within the proposed OWEF site and, therefore, would not combine to result in a cumulative noise impact.

Operational activities related to SDG&E's Proposed Photovoltaic Solar Field (CACA-051625) would be expected to generate low levels of noise associated with transformers and other electrical equipment utilized to generate power. In addition, O&M activities for the solar field, which may include panel washing, panel replacement, road maintenance, etc., would be expected to result in more noticeable short-term increases in ambient noise levels. The noise generated by operation of the photovoltaic solar field would have the potential to combine with the operational noise from the proposed OWEF such that cumulative operational noise impacts would occur.

Operation of the OWEF would cause a minor increase in traffic along local highways, including the I-8, SR-98, and Imperial Highway which would have the potential to combine with traffic generated by other projects in the area, especially the Coyote Wells Specific Plan and SDG&E's Proposed Photovoltaic Solar Field (CACA-051625). Long-term cumulative traffic noise impacts would occur along portions of SR-98 and Imperial Highway. On-site O&M activities for the OWEF would occur approximately 1.4 miles away from the Coyote Wells Specific Plan boundary. Noise generated from these activities would occur too far away to result in cumulative impacts.

Operation of the meteorological towers associated with the Renewergy LLC wind testing would not be expected to generate perceptible noise levels such that no cumulative noise impact would occur from operation of these meteorological towers in conjunction with the proposed OWEF.

4.9.9.6 Decommissioning

Decommissioning of the OWEF would occur 30 years in the future. Noise generated from long-term operation of the Sunrise Powerlink transmission line, Coyote Wells Specific Plan, and SDG&E's Proposed Photovoltaic Solar Field (CACA-051625), among other projects that may be in operation by the time decommissioning occurs, would have the potential to combine with noise generated from decommissioning of the OWEF. Corona noise from the transmission line would combine with on-site decommissioning activities, and traffic related to decommissioning activities would combine with traffic generated by the Coyote Wells Specific Plan and SDG&E's Proposed Photovoltaic Solar Field (CACA-051625), among other project yet to be identified, resulting in potentially higher noise levels along roadways in the project area resulting in a cumulative impact. Once decommissioning activities are completed, noise levels in the project area would decrease, as there would be no longer be operational noise generated by the proposed OWEF.

CEQA Significance Determinations

Construction/Decommissioning. No permanent noise impacts are associated with construction and decommissioning; therefore, Criterion NZ-3 would not apply.

- **NZ-1.** With the implementation of BMPs and mitigation measures required under the proposed OWEF and alternatives, the project's would not make cumulatively considerable contribution to cumulative impacts associated with exposing persons to noise or vibration levels in excess of standards during construction. Noise from decommissioning activities would have the potential to combine with the long-term operations of other projects in the area, such as the Sunrise Powerlink transmission line, Coyote Wells Specific Plan, and SDG&E's Proposed Photovoltaic Solar Field (CACA-051625), which could result in potentially significant cumulative noise impacts. The OWEF's contribution to this cumulative impact, however, would not be cumulatively considerable.

- **NZ-2.** Groundborne vibration or noise levels from construction activities associated with the OWEF would pose no risk of cosmetic damage to any existing buildings and would not combine with other projects to result in a cumulative impact. No cumulative impact would occur.

- **NZ-4.** Construction of the Coyote Wells Specific Plan may occur concurrently with the OWEF; however, construction activities would occur 1.4 miles away from the proposed OWEF and, therefore, on-site construction activities would be too far away to result in combined noise impacts. Off-site cumulative impacts related to traffic could occur along I-8, SR-98, and/or Imperial Highway as common access routes; however, traffic volumes along these roadways would need to be doubled to even cause a perceptible increase in noise levels (3 dBA), which is not likely to occur on I-8 but could occur on Imperial Highway between I-8 and SR-98 and on SR-98 west of Imperial Highway, which would result in a cumulative impact. The OWEF's contribution to this cumulative impact, however, would not be cumulatively considerable.

  Noise generated from long-term operation of the Sunrise Powerlink transmission line, Coyote Wells Specific Plan, and SDG&E's Proposed Photovoltaic Solar Field (CA-051625), among other projects that may be in operation by the time decommissioning occurs, would have the potential to combine with noise generated from decommissioning of the OWEF. Corona noise from the transmission line would combine with on-site decommissioning activities and traffic related to decommissioning activities would combine with traffic generated by the Coyote Wells Specific Plan and SDG&E's Proposed Photovoltaic Solar Field (CA-051625), among other project yet to be identified, resulting in potentially higher noise levels along roadways in the project area resulting in a cumulative impact. The OWEF's contribution to this cumulative impact, however, would not be cumulatively considerable.

Operations. Operational impacts are considered permanent; therefore, Criterion NZ-4 regarding temporary or periodic increases in noise levels would not apply.

- **NZ-1.** Operational noise impacts of the OWEF and alternatives would meet the Imperial County daytime and nighttime noise limits. Noise from other projects operating in the area, such as the Sunrise Powerlink transmission line and SDG&E's Proposed Photovoltaic Solar Field (CA-051625), would have the potential to combine with the operational noise of the OWEF to result in an exceedance of the established standards. Therefore, cumulative impact related to exposing persons to noise in excess of standards would occur; however, the OWEF's contribution to this cumulative impact would not be cumulatively considerable.
- **NZ-2.** Groundborne vibration or noise levels from operational activities associated with the OWEF would pose no risk of cosmetic damage to any existing buildings and would not combine with other projects to result in a cumulative impact. No cumulative impact from excessive groundborne vibration or groundborne noise levels would occur.
- **NZ-3.** Operational noise from the OWEF's wind turbines would result in significant permanent increase in ambient noise levels that would be cumulatively considerable. Combined with the corona noise from the Sunrise Powerlink transmission line (as well as inspection and maintenance activities), and noise from operation of SDG&E's Proposed Photovoltaic Solar Field (CA-051625), significant cumulative permanent increases in ambient noise levels would occur. Operation of the OWEF would also cause a minor increase in traffic along local highways, including the I-8, SR-98, and Imperial Highway, which would have the potential to combine with traffic generated by other projects in the area, especially the Coyote Wells Specific Plan and SDG&E's Proposed Photovoltaic Solar Field (CACA-051625). Long-term cumulative traffic noise impacts would occur along portions of SR-98 and Imperial Highway; however, the OWEF's contribution would not be cumulatively considerable, as operational traffic noise produced by the OWEF would be minimal.

4.9.10 Mitigation Measures

The OWEF would implement recommended BMPs from BLM's Wind Programmatic EIS, which were adopted as part of the proposed Wind Energy Development Program to reduce potential noise impacts (BLM, 2005). In addition to the BLM BMPs, project-specific mitigation measures evaluated for their ability to eliminate or reduce potential substantial adverse impacts related to construction noise were developed for the proposed OWEF.

BLM Best Management Practices

Proponents of wind energy development projects shall take measurements to assess the existing background noise levels at a given site and compare them with the anticipated noise levels associated with the proposed project.

Construction BMPs

- Noisy construction activities shall be limited to the least noise-sensitive times of day (daytime only between 7 a.m. and 10 p.m.) and weekdays.
- Whenever feasible, different noisy activities (e.g., earthmoving, foundation construction), shall be scheduled to occur at the same time since additional sources of noise generally do not add a significant amount of noise.
- All equipment shall have sound-control devices no less effective than those provided on the original equipment.
- All construction equipment used shall be adequately muffled and maintained.
- All stationary construction equipment (i.e., compressors and generators) shall be located as far as practicable from nearby residences.

Project-Specific Mitigation Measures

In addition to the BLM BMPs listed above, project-specific mitigation measures have been developed to reduce and/or avoid noise impacts associated with construction, decommissioning, and O&M of the proposed OWEF or an alternative. These project-specific mitigation measures are presented below.

Construction/Decommissioning Mitigation

Noise-1 **Limit Hours of Construction/Decommissioning.** When construction is occurring within 3,000 feet of residential and/or recreational areas, construction/decommissioning activities (including truck deliveries) shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. on Saturday and not permitted on Sunday or holidays to avoid exceeding the Imperial County Noise Element limits and meet Imperial County construction equipment operations limitations.

Noise-2 **Ensure Equipment Performance.** During construction/decommissioning and prior to commencement of daily construction/decommissioning activities, the Applicant or project contractor shall inspect and verify that each piece of equipment, as appropriate, is fitted with efficient, well-maintained mufflers no less effective than those provided on the original equipment to reduce equipment noise emissions.

Noise-3 **Limit Use of Noise-Producing Signals.** The use of noise-producing signals, including horns, whistles, electronic alarms, sirens, and bells will be for safety purposes only. Sound-control devices shall be installed on all construction equipment, no less effective than those provided on the original equipment. Broadband noise backup alarms shall be used on mobile equipment.

Noise-4 **Notify Residences of Construction/Decommissioning.** The Applicant or project contractor shall provide advanced notification through public mailings and signs directed towards residents, landowners, and recreational users within one mile of the site at least one week prior to construction/ decommissioning. The notice shall state specifically when and where construction/ decommissioning activities would occur in the area. A phone number shall be provided as part of all public notifications to enable individuals to contact the Applicant and/or project contractor to report any significant undesirable noise conditions associated with construction or decommissioning activities. If the telephone is not staffed 24 hours per day, the Applicant and/or project contractor shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This number shall be maintained until the project has been operational for at least one year. The Applicant shall document, investigate, and evaluate all complaints and attempt to resolve all legitimate project-related noise complaints and provide the BLM with the results of said investigation no later than 15 days after the complaint.

Noise-5 **Limit Hours of Road and Turbine Maintenance Activities.** Road and turbine maintenance activities involving the use of large construction equipment, such as graders, cranes, and/or man lifts shall be limited when occurring within 3,000 feet of an occupied residence to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. on Saturday and not permitted on Sunday or holidays to avoid exceeding the Imperial County Noise Element limits and meet Imperial County construction equipment operations limitations.

BLM's BMPs would limit the hours of construction activities; would schedule noise construction activities to occur simultaneously, thereby reducing the opportunities for noise impacts; would ensure equipment has sound-control devices and are adequately muffled and maintained to limit noise at the source; would locate stationary construction equipment away from residences; and would require notification of nearby residences when noise activities are required. Mitigation Measure Noise-1 would further limit construction activities to within the time limitations specified in the Imperial County General Plan Noise Element for construction when occurring near residential receptors and/or recreational areas. Mitigation Measure Noise-2 would ensure equipment performance by inspecting and verifying the mufflers and sound-control devices required by BLM's BMPs are implemented. Mitigation Measure Noise-3 would limit the use of noise-producing signals, which would minimize irritation to residences from high-pitched intermittent noises. Mitigation Measure Noise-4 would provide a notification mechanism for residences to not only provide them notice of when construction or decommissioning activities would occur, but also to provide a means of contacting the Applicant and/or project contractor in the event noise levels are affecting residences.

In general, O&M activities would not result in substantial noise impacts; however, maintenance activities associated with road grading and turbine maintenance would have the potential to result in substantial increases in ambient noise levels and exceed Imperial County General Plan Noise Element limits (nighttime only). These activities would occur infrequently and would move throughout the site. Mitigation Measure Noise-5 would limit the hours of road and turbine maintenance activities to the hours allowed by the Imperial County General Plan Noise Element for construction activities when these types of O&M activities are occurring in close proximity to occupied residences, which would meet the intent of the County and minimize impacts to residences from these activities.

Because these mitigation measures would not disturb or disrupt the natural environment, they would not result in additional adverse impacts.

4.9.11 Residual Impacts After Mitigation

Construction and decommissioning noise would be substantially reduced with implementation of BLM's construction BMPs and Mitigation Measures Noise-1 through Noise-4.

Operations of the wind turbines under the worst-case scenario (low temperature and high relative humidity – Scenario 1) at the closest residences were predicted to range from 43.1 to 37.8 dBA Leq. Considering ambient noise levels as low as 41 dBA daytime and 30 dBA nighttime, the noise levels produced by the wind turbines during daytime hours would not be noticeable (< 3dBA Leq increase); however, at night, these noise levels would be a substantial increase over ambient and in the quieter areas (away from highways) would be perceived as a doubling of loudness (>10 dBA Leq increase). Furthermore, as discussed in Section 3.10.1 (Noise – Environmental Setting), under "General Information on Wind Turbine Noise," a limit of 35 dBA would be consistent with the EPA noise level for no more than "sporadic complaints" and the Pedersen and Waye prediction for community reaction would be just above the "high annoyance threshold for wind turbine noise." As such, these noise levels may result in complaints from local residences resulting in an unavoidable adverse impact. No mitigation is available to reduce this impact without removal of wind turbines.

In general, O&M activities would result in only minor impacts; however, noisy maintenance activities associated with road grading and turbine maintenance would have the potential to result in substantial increases in ambient noise levels and exceed Imperial County General Plan Noise Element limits (nighttime only). With implementation of Mitigation Measure Noise-5, adverse impacts during O&M would be avoided.

4.10 Paleontological Resources

The BLM defines "significant paleontological resources" as any fossil that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include those that lack provenience (the source, origin, or location of a fossil and the recording thereof) or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes (bony external plate or scale, as on the shell of a turtle), skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (fossilized feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities (BLM, 2009).

4.10.1 Methodology for Analysis

The scope of this analysis included geologic map research, an aerial photo review, a review of pertinent scientific literature, a review of museum data, and a field survey. The paleontological resource work was conducted in accordance with current BLM paleontological resource management policy (BLM Manual and Handbook 8270-1, 1998; BLM IM 2008-009, 2007; BLM IM 2009-011, 2008). The field survey was completed under BLM Paleontological Resource Use Permit # CA-10-00-006P.

The greater the amount of disturbance to paleontologically sensitive geologic formations (rocks and sediments), the greater the likelihood of adverse impacts to scientifically significant paleontological resources. Because a block field survey (pedestrian examination of all outcrops) of the project area was completed in December 2010 and January 2011 it is assumed that few if any additional scientifically significant fossils remain on the ground surface within the project area, and that adverse impacts to fossils on the ground surface from project-related ground disturbing actions will be negligible. Over time, additional fossils will erode onto the surface, so it should also not be assumed that future ground disturbing projects in the area will not disturb scientifically significant fossils. Furthermore, it is assumed that scientifically significant fossils are located under the ground surface and although their specific locations cannot be determined within the project area, the potential for adverse effects resulting from project-related ground disturbing actions correlates with the paleontological sensitivity rankings of the geologic formations within the project area as determined using the Potential Fossil Yield Classification System (PFYC) (BLM, 2007) (see Aron and Kelly, 2010).

This impact analysis is based on a comparison of the amount of project-related surface disturbance under each alternative in paleontologically sensitive geologic formations. The greater the acreage of surface disturbance in high sensitivity formations (PFYC Class 5), the greater the potential for adverse impacts to scientifically significant fossils that are located in the subsurface. Conversely, lesser amounts of disturbance in high sensitivity geologic formations have a lower potential for adverse impacts to scientifically significant fossils that are located in the subsurface. The analysis is a two-dimensional approach that does not take into account depth (volume of subsurface disturbance), only areal (lateral) extent.

The approach taken in this analysis is to: (1) determine the acreage under each alternative of paleontologically sensitive areas (as determined by geologic mapping and the PFYC) that would be subject to surface disturbance in order to estimate potential impacts to buried fossils which are still contained within bedrock and surficial sediments within the project area, and whose specific locations are unknown; and (2) determine the number and locations of recorded fossil sites within each alternative that should be avoided or otherwise mitigated prior to surface disturbance. It is assumed that the surface geology and geographic distribution of geologic units as published and as modified as the result of the paleontological field survey (Aron and Kelly, 2011) is the same as will be encountered in the subsurface during construction excavations. Disturbance acreage for turbine pads, substations, underground connections and access roads was calculated based on temporary impact areas.

4.10.2 CEQA Significance Criteria

Adverse impacts to paleontological resources occur with the damage or destruction of fossils that are scientifically significant and the loss of associated scientific information. This includes destruction as the result of surface and subsurface disturbance as well as unlawful vandalism and unauthorized collection of fossil remains. Implementing paleontological mitigation for known fossil sites and unknown subsurface fossil sites would ensure that potential adverse impacts on paleontological resources within the project area are reduced or avoided. This includes collecting or avoiding scientifically significant fossils located on the ground surface and monitoring construction excavations in rocks and sediments with the potential to contain subsurface fossils so that they can be salvaged when they are uncovered.

Direct impacts to paleontological resources are the result of breakage and crushing as the result of disturbance to fossils that have eroded onto the surface and subsurface rocks and sediments in which fossils are entombed. Indirect impacts involve increased access to paleontological resources by construction personnel and recreational users of public lands as the result of project-related construction, leading to vandalism and unauthorized collection (theft) of the resource.

The indicator listed below was used to determine if the proposed OWEF would result in impacts to paleontological resources. This indicator is the same as the significance criteria for paleontological resources listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. A project would have a significant paleontological resources impact if it would:

Paleo-1 Directly or indirectly destroy a unique paleontological resource[1] *or site or unique geologic feature.*

4.10.3 Alternative 1: Proposed Action

4.10.3.1 Direct and Indirect Impacts

Construction

Construction-related disturbance of geologic formations (rocks and sediments) with paleontological potential could result in direct adverse impacts consisting of damage or destruction of scientifically significant paleontological resources and the loss of associated scientific information. As shown in Table

---

[1] i.e., a scientifically significant paleontological resource.

4.10-1, under Alternative 1 there would be an estimated 640 acres of geologic units with low paleontologic potential (PFYC Class 2) disturbed by construction and an estimated 23.9 acres of geologic units with moderate paleontologic potential (PFYC Class 4) disturbed by construction. The potential for direct impacts to paleontological resources during construction would be substantially reduced with the implementation of Mitigation Measures Paleo-1 through Paleo-3 (see Section 4.10.10, below).

Table 4.10-1. Construction-Related Disturbance of Paleontological Resources, Acres

Paleontological Potential	Alternative 1	Alternative 2	Alternative 3
Low (PFYC Class 2)	640	598.7	493.2
Moderate (PFYC Class 4)	23.9	17.6	2.6
Very High (PFYC Class 5)	0	0	0
Total	663.9	616.3	495.8

Source: Paleo Solutions, Inc., 2011.

The potential for construction-related indirect impacts is anticipated to be low because most of the project area has low paleontologic potential, and in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Few if any additional scientifically significant fossils are expected to remain on the ground surface within the project area. Additionally, with the implementation of paleontological mitigation measures for known fossil sites and unknown subsurface fossil sites, potential adverse impacts on paleontological resources within the project area are reduced or avoided and adverse impacts to fossils on the ground surface from project-related ground-disturbing actions would be negligible.

Operation and Maintenance

No direct impacts to paleontological resources are anticipated in association with project operation and maintenance. The potential for indirect impacts in association with project operation and maintenance is anticipated to be low because most of the project area has low paleontologic potential, and in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Although it is likely that additional fossils will erode onto the surface over time during the lifetime of the OWEF, based on existing conditions these will be highly fragmentary and of small size, and will therefore be protected by virtue of the fact that they will be difficult to locate for the purpose of vandalism or unauthorized collection. Therefore, with the implementation of mitigation measures for known fossil sites and unknown subsurface fossil sites, including Paleo-1 through Paleo-3 (see Section 4.10.10, below), potential adverse impacts on paleontological resources within the project area would be negligible.

Decommissioning

No direct impacts to paleontological resources are anticipated in association with project decommissioning. The potential for indirect impacts in association with project decommissioning is anticipated to be low because most of the project area has low paleontologic potential, and in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Although it is likely that additional fossils will erode onto the surface over time during the lifetime of the OWEF, based on existing conditions these will be highly fragmentary and of small size, and will therefore be protected by virtue of the fact that they will be difficult to locate for the purpose of vandalism or unauthorized collection and impacts on paleontological resources within the project area would be negligible.

4.10.3.2 CEQA Significance Determinations

As shown in Table 4.10-1, under Alternative 1 there would be 640 acres with low paleontologic potential (PFYC Class 2) and 23.9 acres with high paleontologic potential (PFYC Class 4) disturbed during construction, for a total of 23.9 acres with paleontologic potential. Areas with low paleontologic potential constitute 640 acres, which is 96.4 percent of the total amount (663.9 acres total) of proposed disturbance area under this alternative. Scientifically significant paleontological resources located on the surface of the project area were collected prior to construction and transferred to a federally approved paleontological repository, thereby eliminating the potential for adverse impacts on these resources.

The potential for damaging or destroying scientifically significant paleontological resources is low. The potential for directly or indirectly destroying a unique geologic feature associated with paleontological resources is low. The potential for causing the loss of valuable scientific information by disturbing the geologic context in which scientifically significant paleontological resources are contained is low. Implementation of Mitigation Measure Paleo-1 would avoid construction in two areas of Palm Spring Formation (PFYC Class 4) exposures within the OWEF boundaries; Mitigation Measure Paleo-2 requires construction personnel be trained on the recognition of the types of paleontological resources that could be encountered in the project area and the procedures to be followed; and Mitigation Measure Paleo-3 requires that when potential fossils are discovered they be left undisturbed and provides for notification of the proper personnel (see Section 4.10.10). With implementation of these mitigation measures, impacts on paleontological resources would be reduced to a less-than-significant level.

4.10.4 Alternative 2: 137 Wind Turbine Generators

4.10.4.1 Direct and Indirect Impacts

Construction

Construction-related disturbance of geologic formations (rocks and sediments) with paleontological potential could result in direct adverse impacts consisting of damage or destruction of scientifically significant paleontological resources and the loss of associated scientific information. As shown in Table 4.10-1, under Alternative 2 there would be an estimated 598.7 acres of geologic units with low paleontologic potential (PFYC Class 2) disturbed by construction; and an estimated 17.6 acres of geologic units with high paleontologic potential (PFYC Class 4) disturbed by construction. The potential for direct impacts to paleontological resources during construction would be substantially reduced with implementation of Mitigation Measures Paleo-1 through Paleo-3 (see Section 4.10.10, below).

The potential for construction-related indirect impacts is anticipated to be low because most of the project area has low paleontologic potential and, in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Therefore, the area of disturbance would be reduced compared to the Proposed Action (Alternative 1) and, with the implementation of mitigation measures for known fossil sites and unknown subsurface fossil sites, potential adverse impacts on paleontological resources would be reduced or avoided and adverse impacts to fossils on the ground surface from project-related ground-disturbing actions for Alternative 2 would be negligible as well.

Operation and Maintenance

No direct impacts to paleontological resources are anticipated in association with project operation and maintenance. The potential for indirect impacts in association with operation and maintenance is anticipated to be low because most of the project area has low paleontologic potential and, in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Although it is likely that additional fossils will erode onto the surface over time during the lifetime of the project, based on existing conditions these will be highly fragmentary and of small size and will therefore be protected by virtue of the fact that they will be difficult to locate for the purpose of vandalism or unauthorized collection. Adverse impacts would be slightly reduced from those of the Proposed Action and would remain negligible.

Decommissioning

No direct impacts to paleontological resources are anticipated in association with project decommissioning. The potential for indirect impacts in association with decommissioning is anticipated to be low because most of the project area has low paleontologic potential and, in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Although it is likely that additional fossils will erode onto the surface over time during the lifetime of the project, based on existing conditions these will be highly fragmentary and of small size and will therefore be protected by virtue of the fact that they will be difficult to locate for the purpose of vandalism or unauthorized collection. Impacts on paleontological resources for Alternative 2 area would be similar, but slightly reduced compared to the Proposed Action and would remain negligible.

4.10.4.2 CEQA Significance Determinations

As shown in Table 4.10-1, under Alternative 2 there would be 598.7 acres with low paleontologic potential (PFYC Class 2) and 17.6 acres with high paleontologic potential (PFYC Class 4) disturbed during construction, for a total of 616.3 acres with paleontologic potential. Areas with low paleontologic potential constitute 598.7 acres, which is 97.1 percent of the total amount (616.3 acres total) of proposed disturbance area under this alternative. Scientifically significant paleontological resources located on the surface of the project area were collected prior to construction and transferred to a federally approved paleontological repository, thereby eliminating the potential for adverse impacts on these resources.

The potential for damaging or destroying scientifically significant paleontological resources is low. The potential for directly or indirectly destroying a unique geologic feature associated with paleontological resources is low. The potential for causing the loss of valuable scientific information by disturbing the geologic context in which scientifically significant paleontological resources are contained is low. With implementation of Mitigation Measures Paleo-1 through Paleo-3 (see Section 4.10.10, below), impacts on paleontological resources would be reduced to a less-than-significant level.

4.10.5 Alternative 3: 105 Wind Turbine Generators

4.10.5.1 Direct and Indirect Impacts

Construction

Construction-related disturbance of geologic formations (rocks and sediments) with paleontological potential could result in direct adverse impacts consisting of damage or destruction of scientifically significant paleontological resources and the loss of associated scientific information. As shown in Table 4.10-1, under Alternative 3 there would be an estimated 493.2 acres of geologic units with low paleontologic potential (PFYC Class 2) disturbed by construction; and an estimated 2.6 acres of geologic units with high paleontologic potential (PFYC Class 4) disturbed by construction (495.8 acres total). The potential for direct impacts to paleontological resources during construction would be reduced substantially with implementation of Mitigation Measures Paleo-1 through Paleo-3 (see Section 4.10.10, below).

The potential for construction-related indirect impacts is anticipated to be low because most of the project area has low paleontologic potential and, in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. The area of disturbance would be further reduced compared to Alternative 2 (616.3 acres vs. 663.9 acres, as shown in Table 4.10-1) and, with implementation of Mitigation Measures Paleo-1 through Paleo-3 (see Section 4.10.10, below) impacts on paleontological resources would be reduced or avoided. Adverse impacts to fossils on the ground surface from ground-disturbing actions would be further reduced from those described for Alternative 1 and Alternative 2 (see Table 4.10-1) and would be negligible as well.

Operation and Maintenance

No direct impacts to paleontological resources are anticipated in association with project operation and maintenance. The potential for indirect impacts in association with operation and maintenance is anticipated to be low because most of the project area has low paleontologic potential and, in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Although it is likely that additional fossils will erode onto the surface over time during the lifetime of the Project, based on existing conditions these will be highly fragmentary and of small size, and will therefore be protected by virtue of the fact that they will be difficult to locate for the purpose of vandalism or unauthorized collection. Adverse impacts would be similar to those described for Alternative 1 and Alternative 2 and would remain negligible

Decommissioning

No direct impacts to paleontological resources are anticipated in association with project decommissioning. The potential for indirect impacts in association with decommissioning is anticipated to be low because most of the project area has low paleontologic potential and, in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Although it is likely that additional fossils will erode onto the surface over time during the lifetime of the project, based on existing conditions these will be highly fragmentary and of small size, and will therefore be protected by virtue of the fact that they will be difficult to locate for the purpose of vandalism or unauthorized collection. Impacts on paleontological resources from implementation of Alternative 3 would be similar to Alternative 1 and Alternative 2, although slightly reduced. Impacts would remain negligible.

4.10.5.2 CEQA Significance Determinations

As shown in Table 4.10-1, under Alternative 3 there would be an estimated 493.2 acres with low paleontologic potential (PFYC Class 2) and 2.6 acres with high paleontologic potential (PFYC Class 4) disturbed during construction, for a total of 495.8 acres with paleontologic potential. Areas with low paleontologic potential constitute 493.2 acres, which is 99.5 percent of the total amount (495.8 acres total) of proposed disturbance area under this alternative. Scientifically significant paleontological resources located on the surface of the project area were collected prior to construction and transferred to a federally approved paleontological repository, thereby eliminating the potential for adverse impacts on these resources. As such, those significant paleontological resources previously located on the surface of the project area would not be affected.

The potential for damaging or destroying scientifically significant paleontological resources is low. The potential for directly or indirectly destroying a unique geologic feature associated with paleontological resources is low. The potential for causing the loss of valuable scientific information by disturbing the geologic context in which scientifically significant paleontological resources are contained is low. With implementation of Mitigation Measures Paleo-1 through Paleo-3 (see Section 4.10.10, below), impacts on paleontological resources would be reduced to a less-than-significant level.

4.10.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.10.6.1 Direct and Indirect Impacts

Under Alternative 4, the proposed project would not be approved and BLM would not amend the CDCA Plan. As a result, no wind energy project would be constructed on the project site and BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan. Therefore, the impacts of the proposed project would not occur. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's CDCA plan, including another renewable energy project. If the proposed project is not approved, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Several dozen wind and solar development applications for use of BLM land have been submitted for approximately one million acres of the California Desert Conservation Area. Additional BLM land in Nevada and Arizona also has applications for wind and solar projects. Potential adverse impacts to paleontological resources on non-BLM-administered lands under the no action alternative could increase in the event developers focus their wind energy development efforts on state-owned, Tribal, and private lands. While wind energy development on nonfederal lands is subject to a wide array of environmental reviews and approvals by virtue of state and local permitting processes, they may not be subject to NEPA requirements if federal funding or permitting is not required for the project.

4.10.6.2 CEQA Significance Conclusions

Under Alternative 4, the activities at the site are not expected to change noticeably from existing conditions and, as such, this alternative would not result in project-related paleontological resources impacts. However, in the absence of this project, other renewable energy projects may be constructed to meet State and Federal mandates, and those projects would likely have impacts similar to the proposed project in other locations.

4.10.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.10.7.1 Direct and Indirect Impacts

Under Alternative 5, the proposed project would not be approved and the BLM would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the project site and BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would continue to remain in its existing condition, with no new structures or facilities constructed or operated on the site. Impacts would be similar to Alternative 4 above in that potential adverse impacts to paleontological resources on non-BLM-administered lands could increase in the event developers focus their wind energy development efforts on state-owned, Tribal, and private lands. While wind energy development on nonfederal lands is subject to a wide array of environmental reviews and approvals by virtue of state and local permitting processes, they may not be subject to NEPA requirements if federal funding or permitting is not required for the project.

4.10.7.2 CEQA Significance Conclusions

Under Alternative 5 the activities at the site are not expected to change noticeably from existing conditions and, as such, this alternative would not result in project-related paleontological resources impacts. However, as discussed for Alternative 4 above, in the absence of this project, other renewable energy projects may be constructed to meet State and Federal mandates, and those projects would have impacts similar to the proposed project in other locations and impacts on non-BLM-administered lands could increase in the event developers focus their wind energy development efforts on state-owned, Tribal, and private lands.

4.10.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.10.8.1 Direct and Indirect Impacts

Under Alternative 6, the proposed project would not be approved. However, BLM would amend the CDCA Plan to allow for wind energy projects on the site. As a result, it is possible that another wind energy project could be constructed on the project site.

Because the CDCA Plan would be amended, it is possible that the site would be developed with the same or a different wind energy technology. As a result, impacts would result from the construction and operation of the wind energy technology and would likely be similar to the impacts from the proposed project.

4.10.8.2 CEQA Significance Conclusions

Under Alternative 6 the activities at the site are not expected to change noticeably from existing conditions and, as such, this alternative would not result in project-related impacts to paleontological resources. However, in the absence of this project, other renewable energy projects may be constructed at the project site or elsewhere to meet State and Federal mandates, and those projects could have impacts similar to the proposed project.

4.10.9 Cumulative Impacts

4.10.9.1 Geographic Extent/Context

The geographic extent for cumulative impacts analysis of paleontological resources includes a broad region where fossil records can be encountered due to ground-disturbing activities. Therefore, all projects discussed in Section 4.1.5 and identified in Table 4.1-1 are considered in the cumulative analysis for paleontological resources. Impacts to paleontological resources within the area of ground-disturbing activities for the proposed project have the potential to combine with similar impacts of past, present, and future (planned) projects identified in Table 4.1-1.

4.10.9.2 Existing Cumulative Conditions

Cumulative conditions to paleontological resources involve the loss of non-renewable scientifically important fossils and associated data, and the incremental loss to science and society of these resources over time. Energy development projects, as well as commercial and residential development projects, have resulted in cumulative conditions affecting paleontological resources in the Imperial Valley. A block field survey (pedestrian examination of all outcrops) of the project area was completed in December 2010 and January 2011 and, based on the survey results, it is assumed that few if any additional scientifically significant fossils remain on the ground surface within the project area, and that adverse impacts to fossils on the ground surface from project-related ground disturbing actions will be negligible. Additionally, two areas of Palm Spring Formation within the greater project area were identified during the field survey as having relatively high densities of vertebrate fossils on the ground surface. These areas are not anticipated to be affected by project construction, but it is recommended that they be avoided by future surface-disturbing actions in order to preserve the fossils in their native geologic context. The implementation of paleontological mitigation measures during surface disturbing projects has resulted in the salvage and permanent preservation of large numbers of scientifically significant paleontological resources that would otherwise have been destroyed making these fossils available for scientific research and education by placing them in museum collections. This has greatly reduced the cumulative effects of such projects on paleontological resources.

4.10.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR. Table 4.1-2 identifies the cumulative projects that are located in the geographic area of analysis for cumulative impacts to paleontological resources.

4.10.9.4 Construction

Unknown, unrecorded paleontological resources may be found at nearly any present and future development site. However, as they are discovered, sites are recorded and information retrieved. If the nature of the resource requires it, the resource is protected. When discovered, paleontological resources are treated in accordance with applicable federal and State laws and regulations as well as the mitigation measures and permit requirements applicable to a project.

It is not known what paleontological resources, if any, would be affected by development of all present and future projects identified in Table 4.1-2. However, given the density of past development in San Diego and Imperial Counties, and the large number of reasonably foreseeable projects listed in Table 4.1-2, it is reasonable to assume that resources exist and could be uncovered at several of these sites. Mitigation Measures Paleo-1 through Paleo-3 require that resources discovered during construction of any present and future projects be protected, thereby reducing impacts. Assuming that pre-project surveys are required, it is reasonable that few if any additional scientifically significant fossils will remain on the ground surface within a project area. Additionally, with the implementation of paleontological mitigation measures during surface disturbance would result in the salvage and permanent preservation of large numbers of scientifically significant paleontological resources that would otherwise be destroyed. This would greatly reduce the cumulative effects of such projects on paleontological resources, and would make these fossils available for scientific research and education by placing them in museum collections. Therefore, the proposed OWEF impacts, when combined with impact from past, present and reasonably foreseeable projects would be negligible.

4.10.9.5 Operation and Maintenance

As discussed in Alternative 1, no direct impacts to paleontological resources are anticipated in association with project operation and maintenance and indirect impacts are anticipated to be low because most of the project area has low paleontologic potential, and in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. Therefore, with the implementation of mitigation measures for known fossil sites and unknown subsurface fossil sites potential adverse impacts on paleontological resources within the project area would be negligible.

4.10.9.6 Decommissioning

No direct impacts to paleontological resources are anticipated in association with project decommissioning. The potential for indirect impacts in association with project decommissioning is anticipated to be low because most of the project area has low paleontologic potential, and in areas with moderate and high potential, scientifically significant paleontological resources that were located on the surface of the project area and that were potentially vulnerable to vandalism and theft were collected prior to construction. With the implementation of the included mitigation measures, no decommissioning-related cumulative impacts to paleontological resources are anticipated.

4.10.9.7 CEQA Significance Determinations

Following implementation of BMPs and mitigation measures presented in Section 4.10.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Paleontological Resources would not be significant.

4.10.10 Mitigation Measures

In paleontologically sensitive areas, the objective of paleontological mitigation is to reduce adverse effects on paleontological resources by recovering fossils and associated contextual data prior to and during ground disturbing activities. Paleontological mitigation results in a beneficial impact when scientifically important fossils and associated data are housed in perpetuity and made available for educational purposes and scientific research in an accredited and federally approved museum.

Paleo-1 The two areas of Palm Spring Formation (Potential Fossil Yield Classification [PFYC] Class 4) exposures identified within the Ocotillo Wind Energy Facility (OWEF) boundary, where a high density of vertebrate fossils were found, shall be avoided to preserve subsurface fossils in their native stratigraphic context. Avoidance areas shall be marked prior to construction.

Paleo-2 Prior to construction, a training session on the recognition of the types of paleontological resources that could be encountered within the project area and the procedures to be followed if they are found shall be presented to project construction personnel by a qualified and BLM-permitted professional paleontologist.

Paleo-3 If construction or other project personnel discover any potential fossils during construction, project operation and maintenance, or decommissioning, the fossils shall be left undisturbed and the BLM Authorized Officer shall be notified immediately.

Because these mitigation measures would not disturb or disrupt the natural environment, they would not result in or create additional adverse impacts.

4.10.11 Residual Impacts After Mitigation

The implementation of the included mitigation measures would substantially reduce potential adverse impacts on scientifically significant paleontological resources. Such mitigation measures have been proven to be effective in reducing adverse effects on fossils resulting from surface-disturbing projects on BLM land throughout the western United States. However, even in the most effective paleontological mitigation monitoring program, inadvertent damage to paleontological resources does occur. This damage occurs at the point at which the fossils are uncovered by excavation equipment, and in cases in which fossils are not identified by paleontological monitors during excavation. The damage caused by construction equipment can typically be repaired in a paleontological laboratory. However, damage to fossils that are not identified by paleontological monitors represents an unavoidable adverse impact.

4.11 Public Health and Safety

This section describes effects on public health and safety that could result from implementation of the proposed OWEF and alternatives. The following discussion addresses potential environmental impacts associated with implementation of the proposed OWEF and recommends measures to reduce or avoid adverse impacts anticipated from construction, operation, and decommissioning of the proposed OWEF and alternatives. A discussion of cumulative impacts related to public health and safety is also included in this section.

4.11.1 Methodology for Analysis

To complete this analysis of environmental consequences associated with impacts on public health and safety, the BLM considered potential impacts on the following issue areas: aircraft operations, seismic hazards, hazardous materials, public health, and intentionally destructive acts.

Aircraft Operations

Research on the presence of public and private airports within the vicinity of the proposed OWEF site was conducted as well as coordination with the Department of the Navy, which is located immediately north of the proposed OWEF site. Analysis of the Federal Aviation Administration (FAA) guidelines was conducted to ensure that the Proposed Action and Alternatives determine whether they would adversely affect commercial, military, or personal air navigation safety.

Seismic Hazards

The Proposed Action and alternatives are evaluated in terms of their susceptibility to geologic and seismic hazards. Potential effects on these resources are assessed based upon existing publications and maps completed by regulatory agencies, such as the U.S. Geological Survey, California Geologic Survey, California Division of Mines and Geology and geotechnical engineers who have evaluated the proposed OWEF site. The potential for damage to proposed structures or increased risk of injury due to geologic hazards was analyzed using available data from the aforementioned sources. In addition, the conclusions and recommendations provided in the preliminary geotechnical investigation are evaluated and, where appropriate, incorporated into the analysis.

Hazardous Materials

In order to assess the potential for released hazardous materials to affect the public, this analysis evaluates several aspects of the proposed use of these materials at the facility. It is recognized that some hazardous substances must be used at the facility. Therefore, this analysis was conducted by examining the choice and amount of chemicals to be used, the manner in which the Applicant would use the chemicals, the manner by which they would be transported to the facility, and the way in which the Applicant plans to store the materials on site.

Engineering and administrative controls concerning the use of hazardous materials are included as part of the Proposed Action. Engineering controls are the physical or mechanical systems, such as storage tanks or automatic shut-off valves, that can prevent the spill of hazardous material from occurring, or that can either limit the spill to a small amount or confine it to a small area. Administrative controls are the rules and procedures that workers at the facility must follow that would help to prevent accidents or to keep them small if they do occur. Both engineering and administrative controls can act as methods of prevention or as methods of response and minimization. In both cases, the goal is to prevent a spill from moving off-site and causing harm to the public.

Public Health

Potential impacts from the Proposed Action to public health for residents of Imperial County with respect to disease vectors, pesticide use, shadow flicker, Wind Turbine Syndrome, and electromagnetic fields (see "Public Health" under "Operation and Maintenance," Section 4.11.3) are discussed in this section. Potential impacts will be discussed as they compare to changes in existing conditions. Several controls and programs are already in place within the County such as vector control activities.

Intentionally Destructive Acts

The potential for intentional destructive acts, such as sabotage or terrorism events, to cause impacts to human health and the environment are discussed. As opposed to industrial hazards, collisions, and natural events, where it is possible to estimate event probabilities based on historical statistical data and information, it is not possible to accurately estimate the probability of an act of terrorism or sabotage.

4.11.2 CEQA Significance Criteria

Aircraft Operations

The proposed OWEF could affect human health and safety by affecting aircraft operations. Effects on aircraft operations would occur if the proposed OWEF would:

PH&S-1 *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.*

PH&S-2 *Result in a safety hazard to people that may reside or work within the vicinity of a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport.*

Seismic Hazards

The proposed OWEF could affect human health and safety with seismic hazards. Effects by seismic hazards would occur if the proposed OWEF would:

PH&S-3 *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

- *i.* *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;*
- *ii.* *Strong seismic ground shaking; or*
- *iii.* *Seismic-related ground failure, including liquefaction.*

Hazardous Materials

The proposed OWEF could affect human health and safety by exposing the public and the environment to hazardous materials. Effects on human health and safety would occur if the proposed OWEF would:

PH&S-4 *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;*

PH&S-5 *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment;*

PH&S-6 *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*

PH&S-7 *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (i.e., the Cortese List of underground leaking storage tanks) that would create a significant hazard to the public or the environment.*

Emergency Response

PH&S-8 *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.*

PH&S-9 *Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection and police protection.*

Solid Waste

PH&S-10 *Comply with federal, state, and local statutes and regulations related to solid waste.*

Public Health

There are no CEQA significance criteria related to public health.

Intentionally Destructive Acts

There are no CEQA significance criteria related to intentionally destructive acts.

Removed from Consideration

For all project alternatives, the following criteria were determined to be inapplicable or to result in no impact under alternatives. The determinations regarding these criteria are discussed below and then are not considered further in this analysis.

PH&S-2 *Result in a safety hazard to people that may reside or work within the vicinity of a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport.*

This criterion was determined to be inapplicable or to result in no impact as the project site would not be located within two miles of a public airport or public use airport that would result in a safety hazard for people residing or working in the project area. There would be no impacts under this criterion from any component of the Proposed Action or alternatives.

PH&S-6 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

This criterion was determined to be inapplicable or to result in no impact as no component associated with any project alternative is located within one-quarter of a mile of an existing or proposed school. There would be no impacts under this criterion from any component of the Proposed Action or alternatives.

PH&S-7 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (i.e., the Cortese List of underground leaking storage tanks) that would create a significant hazard to the public or the environment.

This criterion was determined to be inapplicable or to result in no impact. According to the Department of Toxic Substances Control (DTSC) Hazardous Waste and Substances site "Cortese" list, no hazardous waste facilities subject to corrective action are located on the project site (DTSC, 2011).

PH&S-9 Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection and police protection.

This criterion was determined to be inapplicable or to result in no impact as the proposed OWEF would not induce population growth in the area and fire and security services would be provided during construction and on an as-need basis. Implementation of the proposed OWEF is not expected to result in the need to construct new, or to physically alter existing, fire or police protection facilities to maintain acceptable services. There would be no impacts under this criterion from any component of the Proposed Action or alternatives.

PH&S-10 Comply with federal, state, and local statutes and regulations related to solid waste.

This criterion was determined to be inapplicable or to result in no impact as the proposed OWEF would comply with federal, State, and local statutes and regulations related to solid waste. The California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the Project design. During operation of the proposed OWEF, recycling bins would be located on the project site for those domestic recycled materials for which a recycling program is established. The Applicant would contract with a recycler or waste hauler to transport waste to a regional offsite recycling facility. During construction, a Construction Waste Management Plan will be developed to define the minimum practices which are to be employed on the project site to minimize diversion of construction waste and land clearing debris from landfill disposal and re-direct recyclable material. Reuse and recycling of construction debris would reduce operating expenses and save valuable landfill space. Implementation of the proposed OWEF is expected generate a minimal amount of waste and would comply with federal, State, and local statutes and regulations related to solid waste. There would be no impacts under this criterion from any component of the Proposed Action or alternatives.

4.11.3 Alternative 1: Proposed Action

4.11.3.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for the Proposed Action is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Aircraft Operations

Safety hazards to aircraft operations could occur during construction of the Proposed Action. The construction process would occur over the course of 24-30 months and the completed portions of the Proposed Action could pose a potential safety hazard to aircraft operations by presenting an obstruction for low-flying aircraft. The Federal Aviation Administration (FAA) requires a notice of proposed construction for a project so that it can determine whether it would adversely affect commercial, military, or personal air navigation safety. The Proposed Action would comply with the requirement through implementation of Mitigation Measure PHS-1 (see Section 4.11.10) to minimize safety hazards during construction to commercial, military, or civilian air navigation. With the implementation of Mitigation Measure PHS-1, impacts would be reduced, but not completely avoided.

The Emory Ranch private airstrip is located approximately 0.2 mile south of the northeast portion of the project site. The Applicant has consulted with the owner of this private airstrip. At the owner's request, one proposed turbine location was eliminated in order to provide a buffer for the private airstrip. Continued coordination with the County of Imperial and the Emory Ranch private airstrip would address potential safety concerns from the proposed OWEF and minimize safety hazards during construction to this private airstrip (See Mitigation Measure PHS-1 in Section 4.11.10). With the implementation of Mitigation Measure PHS-1, impacts would be reduced, but not completely avoided.

Additionally, the Proposed Action would be located approximately five miles southwest of Naval Reservation Target 103, which is identified as a live bombing area. The Department of the Navy Airspace Consultation Area would be located immediately north of the project site. Wind turbines located on the northern portion of the project site would underlie a low-level military training route which has a lower altitude or "floor" of 200 feet above ground level. Therefore, wind turbines would encroach into the route and impact the military training conducted on it.

The BLM provided the preliminary Plan of Development to the DOD and initiated a consultation process between the Applicant, the DOD, and the BLM. The DOD expressed concern that the wind turbines could interfere with low-level training flights in the Airspace Consultation Area located along the north edge of the project site. Upon conclusion of the consultation, the DOD provided a letter requesting two mitigation measures be implemented by the Proposed Action to address DOD's concerns. The first measure was to limit total turbine height to 400 feet or less in a small area along the northern edge of the project area, due to the existence of a low-level training route with a centerline to the north of the project area. The second request relates to utilization of turbine lighting that is compatible with military night-vision goggles. The Proposed Action will comply with these requests to reduce safety hazard impacts to military training conducted in this airspace consultation area. Mitigation has been recommended reflecting these requests (See Mitigation Measures PHS-1 and PHS-2 in Section 4.11.10) and no adverse impacts would occur with the implementation of these measures.

Seismic Hazards

The project site is not located within an Alquist-Priolo Special Studies Zone; however, the project site is located within three miles of the Elsinore-Coyote Mountain Fault surface trace, and the potential for strong ground shaking is considered high due to this proximity. The potential for surface rupture at the project site is low. (NAA, 2010) Additionally, the highland on which the Proposed Action is located is traversed by multiple strands of the Coyote Mountain and the Laguna Salada faults, and is punctuated by localized compressional squeeze-ups that form dome-shaped hills of uplifted sand and gravel. Given the proximity of the project site to the Elsinore-Coyote Mountain Fault surface trace, structures on the project site may be subject to severe ground shaking, which may result in structural damage. Structural damage to wind turbine generators (WTGs), overhead transmission lines, or other project facilities could injure construction workers at the project site. Although impacts would not be completely avoided, Mitigation Measure PHS-3 (Section 4.11.10) has been recommended to reduce impacts from ground shaking.

Based on review of existing geotechnical reports, published literature as well as the International Building Code (IBC), the project site is considered to be within a high seismic zone that requires additional measures to prevent structural failures from occurring. The published design parameters from the geotechnical report, along with the IBC codes, require the structural engineer to account for large horizontal ground accelerations that would be caused from a maximum credible earthquake (MCE) event. The additional loads from the horizontal ground accelerations would cause the engineer to account for more steel and possibly foundation size to resist these seismic loads. That would mean that based on these site specific seismic loads, these foundations compared to a normal non seismic area, would be larger and would include more reinforcing steel and concrete.

The amount of risk due to the public is relatively small, considering these are not inhabited structures and these are typically located in rural and mostly non populated areas. The design is based on a small probability that a MCE would occur during the design life of the turbines which is about 30 years. Typical earthquake probabilities are based on a 10 percent chance that this size of an earthquake would occur in 50 years. Added to that is an engineered factor of safety of 1.1 which would decrease the chances of complete structural failure. The design for a wind turbine foundation takes into account seismic loadings as follows: (1) Using the IBC methodology; (2) a geotechnical investigation is performed and a seismic site class is selected based on review of the soil type and observed soil strength for this site. The site class is considered with the site-specific earthquake shaking parameters defined by the U.S. Geological Survey as well as overall turbine/tower geometry, stiffness and weights to calculate the seismic load (forces and moments) transferred into the foundation from the design seismic event. These maximum seismic design loads are then combined with the appropriate operational load event (from wind and weight of tower/foundation) event to calculate the maximum force and moment combination resulting from a seismic event. The appropriate operational plus seismic load combination is compared against the extreme wind event to determine if the extreme seismic or extreme wind event controls the design. The controlling load case is then used for designing the turbine foundation. If designed and constructed properly, these turbines should be able to withstand a MCE event (Pattern, 2011). Therefore, structure failure at the project site is not likely and, with the implementation of Mitigation Measure PHS-3, impacts would be reduced, but not completely avoided.

The project site is considered to have low potential for liquefaction. There is no evidence in the area that liquefaction induced by seismic ground motions have occurred. The lack of groundwater in the upper 50 feet along with the age and density/stiffness of the geologic formation indicate that the area is not prone to liquefaction surface distress (NAA, 2010). Since the project site is considered to have low potential for liquefaction, the potential for lateral spreading to occur is also considered low. Further, the turbine foundations and structures would be engineered to withstand lateral forces that would be anticipated in association with strong seismic ground motion. Structure failure at the project site is not likely and, with the implementation of Mitigation Measure PHS-3, impacts would be reduced, but not completely avoided.

Hazardous Materials

A limited amount of hazardous material may be used during construction of the Proposed Action. This may include cleaning fluids, fuels (gasoline, diesel fuel, etc.), lubricants, cleaning solvents, paints, pesticides, and potentially explosives; and would require appropriate storage, use, and disposal. Additionally, soiled rags and similar applicators and clean up materials would require disposal.

Results of an Environmental Data Resources Report prepared on February 4, 2011, showed that the project site was not located in any of the environmental database searches and that no properties of environmental concern were located within 1 mile of the project site (EDR, 2011). The project site is not expected to have any existing contamination (a Phase 1 Environmental Site Assessment is currently in preparation and would be completed prior to commencement of construction).

The use, storage, and disposal of hazardous materials and waste associated with the Proposed Action could result in potential adverse health and environmental impacts associated with improper management of these materials. In general, most potential impacts are associated with the release of these materials to the environment, which could occur if the materials are improperly used, stored, or disposed of. Direct impacts of such releases could include contamination of vegetation, soil, and water, which could result in indirect impacts to human and wildlife populations. All hazardous materials would be handled and stored in compliance with the requirements set forth in the applicable codes and regulations. The Applicant would store all paint, solvents, and any other hazardous materials in the manner specified by the manufacturer and in accordance with local, State, and federal regulations. In addition, all employees would receive training in the use and handling of hazardous materials. A material safety data sheet would be stored with each hazardous material. Although impacts cannot be completely avoided, implementation of a health and safety program during construction of the project (See BMPs in Section 4.11.10) would reduce impacts.

Construction of the Proposed Action would result in a potential hazard to the public or personnel if a hazardous material spill or leak were to occur. In accordance with the California Health and Safety Code, the Applicant would prepare a hazardous materials management plan which would delineate storage areas for hazardous material and hazardous waste; describe proper handling, storage, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. Implementation of the hazardous materials management plan would ensure that materials are handled in a safe manner and would minimize the risk of accidental releases of hazardous materials occurring at the project site (See BMPs in Section 4.11.10). With the implementation of recommended BMPs, hazard to the public or personnel from a hazardous material spill or leak would be reduced, but not completely avoided.

Although not observed during site reconnaissance, contamination from petroleum products (crude oil, gasoline, motor oil, and diesel) is one of the most common types of unknown contamination encountered and is generally detectable by visual and olfactory observation. Grading, drilling, or excavation at the project site has the potential to mobilize hazardous materials currently in the soil, which could result in exposure of personnel and other sensitive receptors such as plants and wildlife to contaminant levels that could result in short-term and/or long-term health effects. Implementation of BMPs (see Section 4.11.10) would reduce this impact by requiring a hazardous materials management plan to contain procedures for handling and disposing of unanticipated hazardous materials encountered during construction. Implementation of Mitigation Measure PHS-4 (see Section 4.11.10) would further reduce impacts by requiring the construction contractor to stop work if suspected contamination is identified, cordon off areas of suspected contamination, take appropriate health and safety measures, have a trained individual conduct sampling and testing of suspected material, and, if contamination is found to be greater than regulatory limits, notify the Imperial County Public Health Department and document all actions. Contamination from hazardous materials at the project site would be reduced with the implementation of recommended mitigation measures, but impacts would not be completely avoided.

Herbicides may be used for vegetation removal around the base of WTGs during construction. Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public, maintenance personnel, wildlife, or sensitive vegetation if herbicides are handled improperly or chemical drift occurs away from the target area. The Applicant or contractor applying herbicides would have all the appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use. Herbicides would be mixed and applied in conformance with the product manufacturer's directions. The herbicide applicator would be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides would not be applied directly to wildlife, products identified as non-toxic to birds and small mammals would be used if nests or dens are observed, and herbicides would not be applied within 50 feet of any surface water body when water is present. Herbicides would not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water. Herbicides would not be applied when wind velocity exceeds 10 miles per hour. According to the Plan of Development for the OWEF, if chemical treatment is applied, it would be consistent with BLM's Record of Decision: Vegetation Treatments Using Herbicides, as supported by the Final EIS for Vegetation Treatments Using Herbicides. Mitigation Measure PHS-5 (see Section 4.11.10) would avoid potential impacts from herbicide use. Adverse health effects to the public, maintenance personnel, wildlife, or sensitive vegetation would not occur.

The potential exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site; however, Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses. With implementation of

Mitigation Measure PHS-8, impacts from the release of hazardous materials to desert washes and ephemeral streams would be reduced, but not completely avoided.

The potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. As jurisdictional drainages occur on the project site, the Applicant would be subject to a spill prevention and response plan (see BMPs in Section 4.11.10), which requires a secondary means of containment for spills of large quantities of petroleum products used at the project site. Implementation of this BMP (see Section 4.11.10) would reduce impacts from the release of motor vehicle fuel or transformer oil. Impacts would be reduced, but not completely avoided. Solid wastes produced during construction of the Proposed Action would include containers, dunnage (support/padding for materials), and packaging materials for turbine components, and miscellaneous wastes associated with assembly activities. Solid wastes resulting from the presence of the construction work crews would include food scraps and other putrid or rotten wastes. All such wastes are expected to be nonhazardous, and would be containerized on site and periodically removed by commercial haulers to existing off-site, appropriately permitted disposal facilities. No adverse impacts from solid waste would occur.

Emergency Response

Although the turbines contain relatively few flammable components, the presence of electrical generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) creates the potential for fire or a medical emergency within the tower or the nacelle. The project site is located in a rural area with several alternative access roads allowing easy access to the site in the event of an emergency. However, perimeter fencing and security gates could physically interfere with emergency vehicle access or personnel evacuation from the project site. The security fence surrounding the substation/utility switchyard, the Operation and Maintenance (O&M) building, and meteorological towers would be the only permanent fencing associated with the Proposed Action. The type and height of this security fence, and the need for temporary security fencing around temporary construction areas, would be determined based on an assessment of risk prior to commencement of construction. The fences for the substation/utility switchyard, O&M building, and meteorological towers would remain locked whenever these facilities are unattended.

During the construction phase, access roads would have gates or signs installed, as necessary, to control public access to the site for safety reasons. Heavy construction-related traffic could interfere with emergency response to the project site or emergency evacuation procedures in the event of an emergency such as a wildfire, a natural gas pipeline explosion, or a chemical spill at the project site. Heavy construction-related traffic could also potentially interfere with emergency response to residences in the project vicinity. To ensure emergency access to the project site during construction, Mitigation Measure PHS-7 and a traffic management plan (see BMPs in Section 4.11.10) have been recommended, which would require the Applicant to appoint an Emergency Response Liaison to coordinate the reduction of construction-related traffic for the duration of any emergency at or nearby the project site and preparation of a traffic management plan that includes assurance of access for emergency vehicles to the project site. Implementation of Mitigation Measure PHS-8 and the traffic management plan BMP would reduce impacts to emergency access, but impacts would not be completely avoided.

Public Health

The current public health status of residents of rural Imperial County is evaluated as it relates to environmental health factors that could be potentially affected by the Proposed Action. Vector-borne disease incidence is a potential issue of concern related to project construction.

Vector-Borne Diseases. Imperial County already actively manages and abates potential disease vectors through the Imperial County Vector Control District which detects and reduces the spread of mosquito-borne disease through surveillance and abatement activities throughout the County (Imperial County, 2011).

Implementation of the proposed project will involve construction that could result in standing water, trash piles, or open containers that could provide breeding areas for mosquitoes, flies, or rodents. These potential disease vectors could pose a hazard to personnel or the public. Mitigation Measure PHS-8 would prohibit standing water, trash piles, and open containers from being accumulated at the site.

Construction of the proposed project would occur in an area favorable to the growth of the Valley Fever vector, the fungus *Coccidioides immitis*, which grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. Project construction would disturb the soil and cause the fungal spores to become airborne, potentially putting construction personnel and wildlife at risk of contracting Valley Fever. In extreme cases the disease can be fatal. However, Imperial County is not considered a high incidence county for incidences of Valley Fever and most Valley Fever cases are very mild, and more than half of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention. In addition, mitigation for dust control (Air-1) as described in Section 4.2 (Air Resources) would minimize the spread of fungal spores.

Intentionally Destructive Acts

Depending on the severity of the event, fixed components of a wind facility could be damaged or destroyed, resulting in economic, safety, and environmental consequences. Equipment used in constructing the wind facility could also be impacted, potentially resulting in loss of life. In general, the consequences of an intentionally destructive act, including sabotage or terrorist attack on a wind facility would be expected to be similar to those discussed under seismic hazards and hazardous materials regarding accidental and natural events. The potential consequences of such events would be site-specific and unlikely to occur.

Operation and Maintenance

Aircraft Operations

Safety hazards to aircraft operations would potentially occur during operation and maintenance of the Proposed Action. As discussed earlier under "Construction," the FAA requires a notice of proposed construction for a project so that it can determine whether it would adversely affect commercial, military, or personal air navigation safety. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during operation and maintenance to commercial, military, or civilian air navigation, but impacts would not completely be avoided.

As previously mentioned under "Construction," the Emory Ranch private airport is located approximately 0.2 mile south of the northeast portion of the Proposed Action site and the Proposed Action would be located approximately five miles southwest of Naval Reservation Target 103, which is identified as a live bombing area. Implementation of Mitigation Measure PHS-1 (Section 4.11.10) would reduce potential aircraft operation impacts to the private airport, but impacts would not completely be avoided. Implementation of Mitigation Measures PHS-1 and PHS-2 (Section 4.11.10) would reduce potential aircraft operation impacts to Naval Reservation Target 103 and no adverse impacts would occur.

Seismic Hazards

Potential seismic hazard impacts during operation and maintenance of the Proposed Action would be the same as described under "Construction" for the Proposed Action. Implementation of Mitigation Measure PHS-3 would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

As discussed under "Construction," operation of the Proposed Action would require the use of limited amounts of various petrochemicals, including fuels, lubricants, and solvents to operate and maintain equipment for maintenance activities. Additionally, the Proposed Action would require a stand-by auxiliary power source for the Project substation and the 500-kV interconnect substation. The power source would be a propane or natural gas generator. Project operations would require the use of transformer oil at Project substations and storage of propane for heating the O&M facility.

Operation of the Proposed Action could result in a potentially significant hazard to the public or personnel if a hazardous material spill or leak were to occur. Implementation of a health and safety program for project operation and maintenance (See BMPs in Section 4.11.10) would reduce impacts. Additionally, implementation of a hazardous materials management plan (see BMPs in Section 4.11.10) would reduce this potential impact by requiring the hazardous materials management plan to contain procedures for handling and disposing of unanticipated hazardous materials encountered during construction, and implementation of Mitigation Measure PHS-4 (see Section 4.11.10) would further reduce potential impacts by requiring the construction contractor to stop work if suspected contamination is identified. Although, impacts would be reduced, they would not be completely avoided.

Similar to the discussion under "Construction," during operation and maintenance, the potential also exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site. Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses, but impacts would not be completely avoided.

Also, as described under "Construction," the potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. The spill prevention and response plan (see BMPs in Section 4.11.10) would reduce potential impacts from the release of motor vehicle fuel or transformer oil, but impacts would not be completely avoided.

Pad-mount transformers at each WTG site could leak oil to the underlying soil. To prevent such an occurrence, the Applicant would install a containment vessel (see BMPs in Section 4.11.10) at each WTG site. A containment vessel is a concrete curb around a raised concrete pad which the pad-mounted transformers rest on. The area between the concrete pad and curb is filled with coarse aggregate, with sufficient void space to hold the volume of oil in the transformer. The bottom of the containment would consist of a filter type media to bind oil particles and yet let clean water pass through. Impacts would be reduced, but not completely avoided.

Solid wastes produced during the operational phase would be very limited and consist primarily of office-related wastes generated at the O&M facility and food wastes from the maintenance crews who might be present on the project site during business hours. All such wastes are expected to be nonhazardous, and would be containerized on site and periodically removed by commercial haulers to existing off-site, appropriately permitted disposal facilities. No adverse impacts related to solid waste would occur.

Emergency Response

As described under "Construction," the project site is located in a rural area with several alternative access roads allowing easy access to the site in the event of an emergency. However, perimeter fencing and security gates could physically interfere with emergency vehicle access or personnel evacuation from the project site. During project operation and maintenance, minimal traffic is expected to occur and is not likely to interfere with emergency response activities.

Public Health

The current public health status of residents of rural Imperial County is evaluated as it relates to environmental health factors that could be potentially affected by the operations of the project as part of the Proposed Action. Vector-borne disease incidence, potential for Valley Fever, as well as potential issues related to shadow flicker and electro-magnetic fields (EMFs) are potential issues of concern related to project operations.

Vector-Borne Diseases. Imperial County actively manages and abates potential disease vectors through the Imperial County Vector Control District which detects and reduces the spread of mosquito-borne disease through surveillance and abatement activities (Imperial County, 2011).

Similar to construction, implementation of the proposed project may involve operations activities that could result in standing water, trash piles, or open containers that could provide breeding areas for mosquitoes, flies, or rodents. These potential disease vectors could pose a hazard to personnel or the public. Mitigation Measure PHS-8 would prohibit standing water, trash piles, and open containers from being accumulated at the site.

Valley Fever. Operations and maintenance activities could potentially disturb soil and cause fungal spores related to Valley Fever to become airborne, potentially putting operations personnel and wildlife at risk of contracting Valley Fever. Unlike construction, however, activities during operations that could potentially disturb soil would be occasional and not expected to be of the same magnitude as during construction. Additionally, Imperial County is not considered a high incidence County for incidences of Valley Fever; therefore, operations activities are unlikely to cause impacts to public health.

Shadow Flicker. With the installation of WTGs, the proposed project has the potential to result in a phenomenon known as "shadow flicker." Shadow flicker is the alternating change in light intensity that occurs when rotating WTG blades cast moving shadows on the ground or on structures. Shadow flicker effects may have the potential to cause seizures in individuals prone to epilepsy. Flicker from turbines that interrupt or reflect sunlight at frequencies greater than 3 Hertz (equivalent to 180 rotations per minute) poses a potential risk of inducing photosensitive seizures (Harding et al., 2008). The rotor speed of the proposed WTGs is between 6 and 14.8 rotations per minute (see Table 2-1 in Section 2), which is substantially slower than the slowest speed that has the potential to cause photosensitive epilepsy. The OWEF has been designed to avoid shadow flicker on sensitive receptors through a combination of careful siting of turbines in relations to residences, and the commitment to deploy Siemens technology which prevents blade rotation on individual turbines as needed to avoid causing shadow flicker on residences.

In addition, the closest sensitive receptors are approximately 0.5 mile from the project site. According to Figure 4.11- 1, the nearest sensitive receptor would have a maximum exposure of 40 hours per year to shadow flicker, with the majority of sensitive receptors in the area having no exposure to shadow flicker. As a result of the extremely slow rotation speed of rotors and the low exposure of residents to any shadow flicker from the Proposed Action, the Proposed Action would not have the potential to result in impacts to individuals with photosensitive epilepsy.

Wind Turbine Syndrome. Wind Turbine Syndrome (WTS) is described as an illness in certain individuals that is potentially caused by wind turbine noise and vibration resulting in sleep disturbance, nausea, tinnitus, and other symptoms. As discussed in Section 3.12.1.5, there is no known dose-response relationship between exposure to wind turbine noise/vibration and health effects. A single study prepared in 2009 (Pierpoint) reported a correlation between distance to large (1.5 to 3 MW) wind turbines and WTS, and suggested that symptoms are eliminated by siting wind turbines a minimum of 1.25 miles away from sensitive receptors. However, the small clinical case study does not support a dose-response relationship, and more research is needed to identify whether wind turbine noise and vibration may cause the reported symptoms. Without any recognized regulatory guidance or thresholds related to WTS, potential impacts cannot be quantified or qualified.

Electromagnetic Fields. Electric voltage (electric field) and electric current (magnetic field) from transmission lines create EMFs. Currently, the State has not adopted any specific limits or regulation on EMF levels related to electric power facilities. The Proposed Action involves the installation of an electrical collection system that will primarily be installed underground as well as a short overhead connection to the new Sunrise Powerlink 500-kV transmission line. Due to the lack of nearby sensitive receptors, long-term exposure to EMFs related to the collection and transmission lines is not expected to occur.

Intentionally Destructive Acts

Depending on the severity of the event, fixed components of a wind facility could be damaged or destroyed, resulting in economic, safety, and environmental consequences. Equipment used in servicing the wind facility could also be impacted, potentially resulting in loss of life. In general, the consequences of an intentionally destructive act, including sabotage or terrorist attack on a wind facility would be expected to be similar to those discussed under seismic hazards and hazardous materials regarding accidental and natural events. The potential consequences of such events would be site-specific and unlikely to occur.

Decommissioning

Aircraft Operations

Safety hazards to aircraft operations would potentially occur during decommissioning of the Proposed Action. As discussed earlier under "Construction" and "Operation and Maintenance," the FAA requires a notice of proposed construction for a project so that it can determine whether it would adversely affect commercial, military, or personal air navigation safety. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during decommissioning to commercial, military, or civilian air navigation, but impacts would not be completely avoided. As wind turbines are dismantled during decommissioning, potential safety hazards to aircraft operations would be removed.

As previously mentioned under "Construction" and "Operation and Maintenance," the Emory Ranch private airport is located approximately 0.2 mile south of the northeast portion of the project site and the Proposed Action would be located approximately five miles southwest of Naval Reservation Target 103, which is identified as a live bombing area. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce potential aircraft operation impacts to the private airport, but impacts would not be completely avoided. Implementation of Mitigation Measures PHS-1 and PHS-2 (Section 4.11.10) would reduce potential aircraft operation impacts to Naval Reservation Target 103 and no adverse impacts would occur. As wind turbines are dismantled during decommissioning, potential safety hazards to aircraft operations would be removed.

Seismic Hazards

Potential seismic hazard impacts during decommissioning of the Proposed Action would be the same as described under "Construction" and "Operation and Maintenance" for the Proposed Action. Implementation of Mitigation Measure PHS-3 (see Section 4.11.10) would reduce the potential for failure of project structures during seismic events, but impacts would not be completely avoided. After completion of decommissioning activities, project structures would no longer exist on the project site and, therefore, would not be subject to severe ground shaking and potential structural damage.

Hazardous Materials

During decommissioning, substantial quantities of solid wastes and industrial wastes could result from dismantling of the Proposed Action. Fluids drained from turbine drivetrain components (e.g., lubricating oils, hydraulic fluids, coolants) are likely to be similar in chemical composition to spent fluids removed during routine maintenance and would be managed in the same manner as analogous maintenance-related wastes. Tower segments are expected to be stored on site for a brief period and eventually sold as scrap. Likewise, turbine components (emptied of their fluids) may have some salvage value. Recycling turbine components would diminish any impacts created by solid wastes during decommissioning. Electrical transformers are expected to be removed from the site and available for other applications elsewhere (in most cases, without the need for removing dielectric fields). Substantial amounts of broken concrete from tower and building foundations as well as rock or gravel from on-site roads or electrical substations would also result from decommissioning. All such materials are expected to be salvageable for use in road-building or bank stabilization projects. Miscellaneous materials without salvage value are expected to be nonhazardous and should be removed from the site by a licensed hauler and delivered to appropriately permitted disposal facilities.

As discussed under "Construction" and "Operation and Maintenance," implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4, PHS-6, and a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use of hazardous materials at the project site. After decommissioning activities, the use of hazardous materials associated with the Proposed Action would no longer exist.

Emergency Response

As described under "Construction," the project site is located in a rural area with several alternative access roads allowing easy access to the site in the event of an emergency. However, perimeter fencing and security gates could physically interfere with emergency vehicle access or personnel evacuation from the project site.

Similar to the construction phase, during the decommissioning phase, access roads would have gates or signs installed, as necessary, to control public access to the site for safety reasons. Heavy traffic could interfere with emergency response to the project site or emergency evacuation procedures in the event of an emergency such as a wildfire, a natural gas pipeline explosion, or a chemical spill at the project site. Heavy traffic could also potentially interfere with emergency response to residences in the project vicinity. To ensure emergency access to the project site during decommissioning, Mitigation Measure PHS-8 and a traffic management plan have been recommended, which would require the Applicant to appoint an Emergency Response Liaison to coordinate the reduction of construction-related traffic for the duration of any emergency at or nearby the project site and preparation of a traffic management plan that includes assurance of access for emergency vehicles to the project site. Implementation of Mitigation Measure PHS-8 and a traffic management plan would reduce impacts to emergency access, but impacts would not be completely avoided.

After decommissioning activities are completed, potential impacts to emergency response associated with the Proposed Action would no longer exist.

Public Health

Decommissioning activities are expected to have similar public health impacts as construction of the Proposed Action. Vector-borne disease incidences would be the primary potential issue of concern related to decommissioning activities.

Vector Borne Diseases. Imperial County actively manages and abates potential disease vectors through the Imperial County Vector Control District which detects and reduces the spread of mosquito-borne disease through surveillance and abatement activities (Imperial County, 2011).

Similar to construction, decommissioning activities could result in standing water, trash piles, or open containers that could provide breeding areas for mosquitoes, flies, or rodents. These potential disease vectors could pose a hazard to personnel or the public. Mitigation Measure PHS-8 would prohibit standing water, trash piles, and open containers from being accumulated at the site.

Valley Fever. Decommissioning of the proposed project would occur in an area favorable to the growth of the Valley Fever vector. Decommissioning activities could disturb soil and cause the fungal spores to become airborne, potentially putting construction personnel and wildlife at risk of contracting Valley Fever. However, Imperial County is not considered a high incidence County for incidences of Valley Fever and most Valley Fever cases are very mild, and more than half of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention. In addition, mitigation for dust control (Air-1) as described in Section 4.2 (Air Resources) would minimize the spread of fungal spores during decommissioning activities.

Intentionally Destructive Acts

Depending on the severity of the event, fixed components of a wind facility could be damaged or destroyed, resulting in economic, safety, and environmental consequences. Equipment used in dismantling the wind facility could also be impacted, potentially resulting in loss of life. In general, the consequences of an intentionally destructive act, including sabotage or terrorist attack on a wind facility would be expected to be similar to those discussed under seismic hazards and hazardous materials regarding accidental and natural events. The potential consequences of such events would be site specific and unlikely to occur.

After decommissioning activities are completed, potential impacts from intentionally destructive acts associated with the Proposed Action would no longer exist.

4.11.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.11.2. Only those significance criteria which were determined in Section 4.11.2 to be relevant to the project are addressed below.

Construction

- **PH&S-1.** The Proposed Action could result in safety hazards to aircraft operations. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would ensure compliance with the FAA requirement for notice of proposed construction for a project so that it can determine whether it would adversely affect commercial, military, or civilian air navigation safety; and to coordinate with the County of Imperial and the Emory Ranch private airport to address potential safety concerns from the Proposed Action. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would ensure that the Proposed Action does not result in a safety hazard to people that may reside or work within the vicinity of a private air strip. Impacts from the Proposed Action would be less than significant.

  With regard to the project's potential effect on the Department of the Navy Consultation Area located immediately north of the project site, implementation of Mitigation Measure PHS-2 would avoid adverse effects from the project.

- **PH&S-3.** The project site is not located within an Alquist-Priolo Special Studies Zone; however, the project site is located within three miles of the Elsinore-Coyote Mountain Fault surface trace, and the potential for strong ground shaking is considered high due to this proximity. Structural damage to WTGs, overhead transmission lines, or other project facilities could injure construction workers at the project site.

  As discussed above in Section 4.11.3.1, based on review of existing geotechnical reports, published literature as well as the IBC, the project site is considered to be within a high seismic zone that requires additional measures to prevent structural failures from occurring. The published design parameters from the geotechnical report along with the IBC codes, require the structural engineer to account for large horizontal ground accelerations that would be caused from a MCE event. The additional loads from the horizontal ground accelerations would cause the engineer to account for more steel and possibly foundation size to resist these seismic loads. That would mean that based on these site-specific seismic loads, these foundations compared to a normal non-seismic area, would be larger and would include more reinforcing steel and concrete. Implementation of Mitigation Measure PHS-3 (see Section 4.11.10) would reduce impacts from a known earthquake fault or strong seismic ground shaking to a less-than-significant level.

The project site is considered to have low potential for liquefaction. There is no evidence in the area that liquefaction induced by seismic ground motions have occurred and the lack of groundwater in the upper 50 feet along with the age and density/stiffness of the geologic formation is not prone to liquefaction surface distress. (NAA, 2010) Since the project site is considered to have low potential for liquefaction, the potential for lateral spreading to occur is also considered low. The Proposed Action would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

- **PH&S-4.** The Proposed Action would result in the use of a limited amount of hazardous material. These may include cleaning fluids, fuels (gasoline, diesel fuel, etc.), lubricants, cleaning solvents, paints, pesticides, and potentially explosives; and would require appropriate storage, use, and disposal. Additionally, soiled rags and similar applicators and clean up materials would require disposal. The use, storage, and disposal of hazardous materials and waste associated with the Proposed Action could result in potential adverse health and environmental impacts associated with improper management of these materials. Direct impacts of a release could include contamination of vegetation, soil, and water, which could result in indirect impacts to human and wildlife populations. The Proposed Action would implement a health and safety program (See BMPs in Section 4.11.10) and a hazardous materials management plan (See BMPs in Section 4.11.10) to ensure that all hazardous materials would be handled and stored in compliance with the requirements set forth in the applicable codes and regulations. The Applicant would store all paint, solvents, and any other hazardous materials in the manner specified by the manufacturer and in accordance with local, State, and federal regulations. In addition, all employees would receive training in the use and handling of hazardous materials. A material safety data sheet would be stored with each material.

Construction of the Proposed Action would result in a potential hazard to the public or personnel if a hazardous material spill or leak were to occur. Implementation of a hazardous materials management plan (see BMPs in Section 4.11.10) would delineate storage areas for hazardous material and hazardous waste; describe proper handling, storage, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. The Applicant would also implement Mitigation Measure PHS-4 (see Section 4.11.10) to further reduce potential impacts by requiring the construction contractor to stop work if suspected contamination is identified, cordon off areas of suspected contamination, take appropriate health and safety measures, have a trained individual conduct sampling and testing or suspected material, and, if contamination is found to be greater than regulatory limits, notify the Imperial County Public Health Department and document all actions.

A large wildfire would pose hazards both to personnel and the public. Additionally, herbicides may be used for vegetation removal around the base of WTGs during construction. Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public, maintenance personnel, wildlife, or sensitive vegetation if herbicides are handled improperly or chemical drift occurs away from the target area. Implementation of Mitigation Measure PHS-5 (see Section 4.11.10) would avoid impacts from herbicide use.

The potential exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site; however, Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses.

The potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. Implementation of spill prevention and response plan (see BMPs in Section 4.11.10) would reduce potential impacts from the use of hazardous materials at the project site. With implementation of a health and safety program, hazardous materials management plan, and Mitigation Measure PHS-5 (see Section 4.11.10), the Proposed Action would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. With implementation of a hazardous materials management plan, Mitigation Measure PHS-6, and a spill prevention and response plan, the Proposed Action would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment. Additionally, with implementation of a health and safety program, the Proposed Action would not expose workers to contaminated or hazardous materials at levels in excess of those permitted by the Federal OSHA in CFR 29, Part 1910, and the Cal/OSHA in CCR Title 8, or expose members of the public to direct or indirect contact with hazardous materials from project construction or operations. Impacts to hazardous materials from the Proposed Action would be less than significant.

- **PH&S-5.** The potential exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site; however, Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses.

  The potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. The Proposed Action would implement a spill prevention and response plan (see BMPs in Section 4.11.10) to reduce potential impacts from the use of hazardous materials at the project site.

  Implementation of a hazardous materials management plan, Mitigation Measure, PHS-4, PHS-6, and a spill prevention and response plan (see Section 4.11.10) would ensure that the Proposed Action would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment. Additionally, with implementation of a health and safety program, the Proposed Action would not expose workers to contaminated or hazardous materials at levels in excess of those permitted by the Federal OSHA in CFR 29, Part 1910, and the Cal/OSHA in CCR Title 8, or expose members of the public to direct or indirect contact with hazardous materials from project construction or operations.

Impacts from the release of hazardous materials associated with the Proposed Action would be less than significant.

- **PH&S-8.** Although the turbines contain relatively few flammable components, the presence of electrical generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) creates the potential for fire or a medical emergency within the tower or the nacelle. The project site is located in a rural area with several alternative access roads allowing easy access to the site in the event of an emergency. However, perimeter fencing and security gates could physically interfere with emergency vehicle access or personnel evacuation from the project site. Project traffic during construction and decommissioning could interfere with emergency response to the project site or emergency evacuation procedures in the event of an emergency such as a wildfire, a natural gas pipeline explosion, or a chemical spill at the project site. Project traffic could also potentially interfere with emergency response to residences in the project vicinity. Implementation of Mitigation Measure PHS-8 and a traffic management plan would require the Applicant to appoint an Emergency Response Liaison to coordinate the reduction of construction-related traffic for the duration of any emergency at or nearby the project site and preparation of a traffic management plan that includes assurance of access for emergency vehicles to the project site. With implementation of PHS-7 and a traffic management plan, the Proposed Action would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Operation and Maintenance

- **PH&S-1.** The Proposed Action could result in safety hazards to aircraft operations during operation and maintenance. Please see discussion above under "Construction". Impacts from the Proposed Action would be less than significant.

  With regard to the project's potential effect on the Department of the Navy Consultation Area located immediately north of the project site, implementation of Mitigation Measure PHS-2 would avoid adverse effects from the project.

- **PH&S-3.** Potential seismic hazard impacts during operation and maintenance of the Proposed Action would be the same as described above under "Construction." Impacts would be less than significant.
- **PH&S-4.** The Proposed Action would result in the use of a limited amount of hazardous material during operation and maintenance. The use, storage, and disposal of hazardous materials and waste associated with the Proposed Action could result in potential adverse health and environmental impacts associated with improper management of these materials. Potential impacts would be the same as described above under 'Construction." With implementation of a health and safety program, hazardous materials management plan, Mitigation Measure PHS-5 (see Section 4.11.10), the Proposed Action would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts from the Proposed Action would be less than significant.
- **PH&S-5.** The potential exists for hazardous materials being used at the project site during operation and maintenance to be released into the desert washes and ephemeral streams that traverse the site. The potential also exists for motor vehicle fuel to be released from on-site storage tanks or for

transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site.

Implementation of a hazardous materials management plan, Mitigation Measures PHS-4, PHS-6, and a spill prevention and response plan (see Section 4.11.10) would ensure that the Proposed Action would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment.

Pad-mount transformers at each WTG site could leak oil to the underlying soil. The Applicant would install a containment vessel (see BMPs in Section 4.11.10) at each WTG site to provide extra protection ensuring oil will not leak into the soil.

Additionally, with implementation of a health and safety program, the Proposed Action would not expose workers to contaminated or hazardous materials at levels in excess of those permitted by the Federal OSHA in CFR 29, Part 1910, and the Cal/OSHA in CCR Title 8, or expose members of the public to direct or indirect contact with hazardous materials from project construction or operations. Impacts from the release of hazardous materials associated with the Proposed Action would be less than significant.

- **PH&S-8.** Although the turbines contain relatively few flammable components, the presence of electrical generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) creates the potential for fire or a medical emergency within the tower or the nacelle. Potential impacts would be as described above under "Construction." With implementation of Mitigation Measure PHS-7 and a traffic management plan, the Proposed Action would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Decommissioning

- **PH&S-1.** The Proposed Action could result in safety hazards to aircraft operations during decommissioning. Please see discussion above under "Construction". Impacts from the Proposed Action would be less than significant.

  With regard to the project's potential effect on the Department of the Navy Consultation Area located immediately north of the project site, implementation of Mitigation Measure PHS-2 would avoid adverse effects from the project.

- **PH&S-3.** Potential seismic hazard impacts during decommissioning of the Proposed Action would be the same as described under "Construction" for the Proposed Action. Impacts would be less than significant.

- **PH&S-4.** The Proposed Action would result in the use of a limited amount of hazardous material during decommissioning. The use, storage, and disposal of hazardous materials and waste associated with the Proposed Action could result in potential adverse health and environmental impacts associated with improper management of these materials. Potential impacts would be the same as described above under 'Construction." With implementation of a health and safety program, hazardous materials management plan, Mitigation Measure PHS-5 (see Section 4.11.10), the

Proposed Action would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

- **PH&S-5.** The potential exists for hazardous materials being used at the project site during decommissioning to be released into the desert washes and ephemeral streams that traverse the site. The potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site.

  Implementation of a hazardous materials management plan, Mitigation Measures PHS-4, PHS-6, and a spill prevention and response plan (see Section 4.11.10) would ensure that the Proposed Action would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment. Additionally, with implementation of a health and safety program, the Proposed Action would not expose workers to contaminated or hazardous materials at levels in excess of those permitted by the Federal OSHA in CFR 29, Part 1910, and the Cal/OSHA in CCR Title 8, or expose members of the public to direct or indirect contact with hazardous materials from project construction or operations. Impacts would be less than significant.

- **PH&S-8.** Although the turbines contain relatively few flammable components, the presence of electrical generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) creates the potential for fire or a medical emergency within the tower or the nacelle. Potential impacts would be as described above under "Construction." With implementation of Mitigation Measure PHS-7 and a traffic management plan, the Proposed Action would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

4.11.4 Alternative 2: 137 Wind Turbine Generators

4.11.4.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for Alternative 2 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Aircraft Operations

Potential safety hazard impacts to aircraft operations during construction of Alternative 2 would be the same as described under "Construction" for the Proposed Action. Implementation of Mitigation Measure PHS-1 (Section 4.11.10) would reduce safety hazards during construction to commercial, military, or civilian air navigation, but impacts would not be completely avoided.

This alternative, however, would not install wind turbines within the low-level training route operated by the Department of the Navy. Therefore, turbine height would not need to be restricted to 400 feet or less.

Seismic Hazards

Potential seismic hazard impacts during construction of Alternative 2 would be the same as described under "Construction" for the Proposed Action. Implementation of Mitigation Measure PHS-3 (see Section 4.11.10) would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

Potential hazardous materials impacts during construction of Alternative 2 would be the same as described under "Construction" for the Proposed Action. Implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4 through PHS-6, and a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use or release of hazardous materials, but impacts would not be completely avoided.

Emergency Response

Potential impacts to emergency response during construction of Alternative 2 would be the same as described under "Construction" for the Proposed Action. Implementation of Mitigation Measure PHS-7 and a traffic management plan would reduce potential impacts to emergency access, but impacts would not be completely avoided.

Public Health

Potential impacts to public health during construction of Alternative 2 would be the same as described under "Construction" for the Proposed Action. Implementation of Mitigation Measure PHS-8 would reduce potential impacts, but impacts would not be completely avoided.

Intentionally Destructive Acts

Potential impacts from intentionally destructive acts, including sabotage or terrorism during construction of Alternative 2 would be the same as described under "Construction" for the Proposed Action. The potential consequences of such events would be site-specific and unlikely to occur.

Operation and Maintenance

Aircraft Operations

Potential safety hazard impacts to aircraft operations during operation and maintenance of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during operation and maintenance to commercial, military, or civilian air navigation, but impacts would not be completely avoided.

This alternative, however, would not install wind turbines within the low-level training route operated by the Department of the Navy. Therefore, turbine height would not be restricted to 400 feet or less.

Seismic Hazards

Potential seismic hazard impacts during operation and maintenance of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of Mitigation

Measure PHS-3 (see Section 4.11.10) would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

Potential hazardous materials impacts during operation and maintenance of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4 through PHS-6, a spill prevention and response plan (Section 4.11.10), and containment vessels (see Section 4.11.10) would avoid potential impacts from the use or release of hazardous materials, but impacts would not be completely avoided.

Emergency Response

Potential impacts to emergency response during operation and maintenance of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. During project operation and maintenance, minimal traffic is expected to occur and is not likely to interfere with emergency response activities.

Public Health

Potential impacts to public health during operation and maintenance of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of Mitigation Measure PHS-8 would reduce potential impacts, but impacts would not be completely avoided.

Intentionally Destructive Acts

Potential impacts from intentionally destructive acts, including sabotage or terrorism during construction of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. The potential consequences of such events would be site-specific and unlikely to occur.

Decommissioning

Aircraft Operations

Potential safety hazard impacts to aircraft operations during decommissioning of Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during decommissioning to commercial, military, or civilian air navigation, but impacts would not be completely avoided.

This alternative, however, would not install wind turbines within the low-level training route operated by the Department of the Navy. Therefore, turbine height would not be restricted to 400 feet or less.

Seismic Hazards

Potential seismic hazard impacts during decommissioning of Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-3 (see Section 4.11.10) would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

Potential hazardous materials impacts during decommissioning of Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4 through PHS-6, and a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use or release of hazardous materials, but impacts would not be completely avoided.

Emergency Response

Potential impacts to emergency response during decommissioning of Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. This Implementation of Mitigation Measure PHS-7 and a traffic management plan would reduce potential impacts to emergency access, but impacts would not be completely avoided.

Public Health

Potential impacts to public health during decommissioning of Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-8 would reduce potential impacts, but impacts would not be completely avoided.

Intentionally Destructive Acts

Potential impacts from intentionally destructive acts, including sabotage or terrorism during construction of Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. The potential consequences of such events would be site-specific and unlikely to occur.

4.11.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) would be the same as described above for the Proposed Action, based on the CEQA Significance Criteria presented in Section 4.11.2. Potential impacts of Alternative 2 would be less than significant.

4.11.5 Alternative 3: 105 Wind Turbine Generators

4.11.5.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for Alternative 3 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Aircraft Operations

Potential safety hazard impacts to aircraft operations during construction of Alternative 3 would be the same as described under "Construction" for the Proposed Action. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during construction to commercial, military, or personal air navigation, but impacts would not be completely avoided.

This alternative, however, would not install wind turbines within the low-level training route operated by the Department of the Navy. Therefore, turbine height would not be restricted to 400 feet or less.

Seismic Hazards

Potential seismic hazard impacts during construction of Alternative 3 would be the same as described under “Construction” for the Proposed Action. Implementation of Mitigation Measure PHS-3 (see Section 4.11.10) would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

Potential hazardous materials impacts during construction of Alternative 3 would be the same as described under “Construction” for the Proposed Action. Implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4 through PHS-6, and a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use or release of hazardous materials, but impacts would not be completely avoided.

Emergency Response

Potential impacts to emergency response during construction of Alternative 3 would be the same as described under “Construction” for the Proposed Action. Implementation of Mitigation Measure PHS-7 and a traffic management plan would reduce potential impacts to emergency access, but impacts would not be completely avoided.

Public Health

Potential impacts to public health during construction of Alternative 3 would be the same as described under “Construction” for the Proposed Action. Implementation of Mitigation Measure PHS-8 would reduce potential impacts, but impacts would not be completely avoided.

Intentionally Destructive Acts

Potential impacts from intentionally destructive acts, including sabotage or terrorism during construction of Alternative 3 would be the same as described under “Construction” for the Proposed Action. The potential consequences of such events would be site-specific and unlikely to occur.

Operation and Maintenance

Aircraft Operations

Potential safety hazard impacts to aircraft operations during operation and maintenance of Alternative 3 would be the same as described under “Operation and Maintenance” for the Proposed Action. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during operation and maintenance to commercial, military, or civilian air navigation, but impacts would not be completely avoided.

This alternative, however, would not install wind turbines within the low-level training route operated by the Department of the Navy. Therefore, turbine height would not be restricted to 400 feet or less.

Seismic Hazards

Potential seismic hazard impacts during operation and maintenance of Alternative 3 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of Mitigation Measure PHS-3 (see Section 4.11.10) would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

Potential hazardous materials impacts during operation and maintenance of the Alternative 3 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4 through PHS-6, a spill prevention and response plan (Section 4.11.10), and containment vessels (see Section 4.11.10) would reduce potential impacts from the use or release of hazardous materials, but impacts would not be completely avoided.

Emergency Response

Potential impacts to emergency response during operation and maintenance of Alternative 3 would be the same as described under "Operation and Maintenance" for the Proposed Action. During project operation and maintenance, minimal traffic is expected to occur and is not likely to interfere with emergency response activities. No adverse impacts would occur

Public Health

Potential impacts to public health during operation and maintenance of Alternative 3 would be the same as described under "Operation and Maintenance" for the Proposed Action. Implementation of Mitigation Measure PHS-8 would reduce potential impacts, but impacts would not be completely avoided.

Intentionally Destructive Acts

Potential impacts from intentionally destructive acts, including sabotage or terrorism during construction of Alternative 3 would be the same as described under "Operation and Maintenance" for the Proposed Action. The potential consequences of such events would be site-specific and unlikely to occur.

Decommissioning

Aircraft Operations

Potential safety hazard impacts to aircraft operations during decommissioning of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-1 (see Section 4.11.10) would reduce safety hazards during decommissioning to commercial, military, or civilian air navigation, but impacts would not be completely avoided.

This alternative, however, would not install wind turbines within the low-level training route operated by the Department of the Navy. Therefore, turbine height would not be restricted to 400 feet or less.

Seismic Hazards

Potential seismic hazard impacts during decommissioning of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-3 (see

Section 4.11.10) would reduce the potential for failure of project structures from seismic hazards, but impacts would not be completely avoided.

Hazardous Materials

Potential hazardous materials impacts during decommissioning of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of a health and safety program, hazardous materials management plan, Mitigation Measures PHS-4 through PHS-6, and a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use or release of hazardous materials, but impacts would not be completely avoided.

Emergency Response

Potential impacts to emergency response during decommissioning of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-8 and a traffic management plan would reduce potential impacts to emergency access, but impacts would not be completely avoided.

Public Health

Potential impacts to public health during decommissioning of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. Implementation of Mitigation Measure PHS-8 would reduce potential impacts, but impacts would not be completely avoided.

Intentionally Destructive Acts

Potential impacts from intentionally destructive acts, including sabotage or terrorism during construction of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. The potential consequences of such events would be site-specific and unlikely to occur.

4.11.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) would be the same as described above for the Proposed Action, based on the CEQA Significance Criteria presented in Section 4.11.2. Potential impacts of Alternative 3 would be less than significant.

4.11.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.11.6.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would not amend the California Desert Conservation Area (CDCA) Plan. As a result, no wind energy project would be constructed, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan, as amended. No action would occur and existing conditions relevant to public health and safety would continue. No impacts associated with the Proposed Action would occur. The land on which the project is proposed would become available to other uses that are consistent with the BLM's CDCA Plan, including another renewable energy project. If the proposed project is not approved, renewable energy projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Several dozen wind and solar development applications for use of BLM land have been submitted for approximately one million acres of the CDCA. Additional BLM land in Nevada and Arizona also has applications for wind and solar projects. Potential adverse impacts to public health and safety on non-BLM-administered lands under the No Action alternative could increase in the event developers focus their wind energy development efforts on state-owned, Tribal, and private lands. While wind energy development on nonfederal lands is subject to a wide array of environmental reviews and approvals by virtue of state and local permitting processes, they may not be subject to NEPA requirements if federal funding or permitting is not required for the project.

4.11.6.2 CEQA Significance Determinations

Alternative 4 to the proposed OWEF would not result in impacts to public health and safety.

4.11.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.11.7.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the site, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Land Use Plan of 1980, as amended. No action would occur and no future development of the project site for wind energy would occur. Existing conditions relevant to public health and safety would continue, but may be altered at some point in the future by construction of a potential project other than wind energy development. No impacts associated with the Proposed Action would occur. However, in the absence of this project, other renewable energy projects may be constructed to meet state and federal mandates, and those projects would have similar impacts in other locations.

4.11.7.2 CEQA Significance Determinations

Alternative 5 to the proposed OWEF would not result in impacts to public health and safety.

4.11.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.11.8.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to allow for other wind projects on the site. As a result, it is possible that another wind energy project could be constructed on the site. No action would occur but the area would be available to wind power development in the future. No impacts associated with the Proposed Action would occur. In the future, if another wind development project is implemented, similar impacts to public health and safety as those described for the proposed OWEF could occur.

4.11.8.2 CEQA Significance Determinations

Alternative 6 to the proposed OWEF would not result in impacts to public health and safety.

4.11.9 Cumulative Impacts

4.11.9.1 Geographic Extent/Context

The geographic scope for cumulative impacts from public health and safety is Imperial County, including the city of Imperial and community of Ocotillo, where potential waste disposal facilities for the project are located. This area also includes interference with emergency response to fire, medical emergencies and hazardous materials spills or leaks. During the 24- to 30-month period of construction for the proposed OWEF, interference with emergency response vehicles can result from construction traffic of the proposed OWEF and other projects (listed below in Section 4.11.9.3) in the area in locations relatively remote from the project site, whereas hazardous materials impacts and other hazards discussed in this section are typically highly localized.

4.11.9.2 Existing Cumulative Conditions

The project area consists of undeveloped land, open space land, scattered rural residences, and the communities of Ocotillo and Nomirage. Within the undeveloped and open space land and residential areas there is little likelihood of significant soil or groundwater contamination, based on a lack of uses that would involve hazardous materials. Within the limited commercial and industrial land use areas of the communities of Ocotillo and Nomirage, many sites, historic and current, may have soil or groundwater contaminated by hazardous substances such as heavy metals and vehicle fuels. The continued development of lands within these communities would result in the continued potential for public health and safety risk factors as former contaminated sites undergo cleanup or are developed for new uses. However, sites with known environmental contamination would be required by law to be investigated and remediated in accordance with regulatory agency standards prior to redevelopment. In addition, areas with previously unknown contamination would likely be discovered during planning, followed by the required reporting and cleanup.

4.11.9.3 Reasonably Foreseeable Projects

A wide variety of past and present development projects could contribute to the cumulative conditions for public health and safety in regards to emergency response in the cumulative analysis area. Tables 4.1-1 and 4.1-2, presented in Section 4.1 of this EIS/EIR, list cumulative projects in the vicinity of the project site and surrounding area. Consideration of the projects listed in Imperial County, identified in Tables 4.1-1 and 4.1-2 and shown on Figures 4.1-1a and 4.1-1b were used to develop this analysis of cumulative effects for public health and safety.

Several types of development projects could contribute to the cumulative impact of the Proposed Action and alternatives, including housing development projects, commercial and industrial development, and renewable energy projects. These types of past and existing projects could combine with potential impacts of the Proposed Action or an alternative to affect public health and safety within the geographic extent of this cumulative analysis.

Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Multiple projects included in the cumulative projects list described in Tables 4.1-1 and 4.1-2, will undergo construction during construction of the proposed OWEF and their effects were considered in the cumulative impacts analysis.

4.11.9.4 Construction

Aircraft Operations

Safety hazards to aircraft operations could occur during construction of the proposed OWEF. This impact does not have the potential to combine with impacts of other projects because of the localized nature of this impact. Furthermore, compliance with FAA regulations and Mitigation Measures PHS-1 and PHS-2 (see Section 4.11.10) would reduce this potential impact. Therefore, impacts of the proposed OWEF would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Seismic Hazards

The project site is located within three miles of the Elsinore-Coyote Mountain Fault surface trace, and the potential for strong ground shaking is considered high due to this proximity. The potential for surface rupture at the project site is low (NAA, 2010). Additionally, the highland on which the proposed OWEF is located is traversed by multiple strands of the Coyote Mountain and the Laguna Salada faults, and is punctuated by localized compressional squeeze-ups that form dome-shaped hills of uplifted sand and gravel. Given the proximity of the project site to the Elsinore-Coyote Mountain Fault surface trace, structures on the project site may be subject to severe ground shaking, which may result in structural damage. Structural damage to wind turbine generators (WTGs), overhead transmission lines, or other project facilities could injure construction workers at the project site. With implementation of Mitigation Measure PHS-3 (see Section 4.11.10), the Applicant would be required to site project facilities outside of fault traces and to construct project facilities in conformance with relevant building codes, which would minimize placement of structures in active fault zones. Potential impacts would be site specific and would be reduced by the implementation of Mitigation Measure PHS-3 (see Section 4.11.10). Therefore, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

The project site is considered to have low potential for liquefaction. There is no evidence in the area that liquefaction induced by seismic ground motions have occurred. The lack of groundwater in the upper 50 feet along with the age and density/stiffness of the geologic formation is not prone to liquefaction surface distress. (NAA, 2010) The project site is considered to have low potential for liquefaction; therefore the potential for lateral spreading to occur is also considered low. Structure failure at the project site is not likely and with the implementation of Mitigation Measure PHS-3, no adverse impacts would occur. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and the proposed OWEF would not contribute to cumulative impacts.

Hazardous Materials

A limited amount of hazardous material may be used during construction of the proposed OWEF. These may include cleaning fluids, fuels (gasoline, diesel fuel, etc.), lubricants, cleaning solvents, paints, pesticides, and potentially explosives; and would require appropriate storage, use, and disposal. The use, storage, and disposal of hazardous materials and waste associated with the proposed OWEF could result in potential adverse health and environmental impacts associated with improper management of these materials. All hazardous materials would be handled and stored in compliance with the requirements set forth in the applicable codes and regulations. Implementation of a health and safety program during construction of the project (See BMPs in Section 4.11.10) would reduce impacts. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Construction of the proposed OWEF would result in a potential hazard to the public or personnel if a hazardous material spill or leak were to occur. Additionally, grading, drilling, or excavation at the project site has the potential to mobilize hazardous materials currently in the soil, which could result in exposure of personnel and other sensitive receptors such as plants and wildlife to contaminant levels that could result in short-term and/or long-term health effects. Implementation of a hazardous materials management plan (see BMPs in Section 4.11.10) and Mitigation Measure PHS-4 (see Section 4.11.10) would ensure that potential impacts are reduced. This impact does not have the potential to combine with contamination from spills from other projects to result in a cumulative impact due to the site-specific nature of soil contamination and implementation of a hazardous materials management plan that would ensure proper cleanup and disposal of contaminated soil.

Herbicides may be used for vegetation removal around the base of WTGs during construction. Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public, maintenance personnel, wildlife, or sensitive vegetation if herbicides are handled improperly or chemical drift occurs away from the target area. To reduce potential impacts from herbicides, implementation of Mitigation Measure PHS-5 (see Section 4.11.10) would occur. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

The potential exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site; however, Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

The potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. Implementation of a spill prevention and response plan (see BMPs in Section 4.11.10) would reduce potential impacts from the use of hazardous materials at the project site. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Emergency Response

Although the turbines contain relatively few flammable components, the presence of electrical generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) creates the potential for fire or a medical emergency within the tower or the nacelle. The project site is located in a rural area with several alternative access roads allowing easy access to the site in the event of an emergency. However, perimeter fencing and security gates could physically interfere with emergency vehicle access or personnel evacuation from the project site. Heavy construction-related traffic could interfere with emergency response to the project site or emergency evacuation procedures in the event of an emergency such as a wildfire, a natural gas pipeline explosion, or a chemical spill at the project site. Heavy construction-related traffic could also potentially interfere with emergency response to residences in the project vicinity. To ensure emergency access to the project site during construction, implementation of Mitigation Measure PHS-7 and a traffic management plan would require the Applicant to appoint an Emergency Response Liaison to coordinate the reduction of construction-related traffic for the duration of any emergency at or nearby the project site and preparation of a construction traffic control plan that includes assurance of access for emergency vehicles to the project site.

This impact has the potential to combine with other current and future projects that would generate high volumes of traffic on area roadways and whose construction schedules overlap with that of the proposed OWEF by creating a cumulative traffic burden on regional roadways as a result of an abundance of construction vehicles. However, given the rural nature of the project area and the fact that most cumulative projects in the project vicinity would not generate high volumes of traffic, the potential for a cumulative impact on emergency response is low. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and the proposed OWEF would not contribute to cumulative impacts.

Public Health

With regard to generating disease vectors, project construction could attract disease vectors by allowing standing water, trash piles, or open containers to accumulating at the site, potentially resulting in a hazard to construction personnel or the general public. However, implementation of Mitigation Measure PHS-8 would reduce this impact to acceptable levels. Mitigation would reduce this impact to a level that would not combine with other projects, therefore, impacts of the proposed project would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects.

Intentionally Destructive Acts

Depending on the severity of the event, fixed components of a wind facility could be damaged or destroyed, resulting in economic, safety, and environmental consequences. Equipment used in constructing the wind facility could also be impacted, potentially resulting in loss of life. In general, the consequences of an intentionally destructive act, including sabotage or terrorist attack on a wind facility would be expected to be similar to those discussed under seismic hazards and hazardous materials regarding accidental and natural events. The potential consequences of such events would be site-specific and unlikely to occur. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and the proposed OWEF would not contribute to cumulative impacts.

4.11.9.5 Operation and Maintenance

Aircraft Operations

Safety hazards to aircraft operations could occur during operation and maintenance of the Proposed Action. This impact does not have the potential to combine with impacts of other projects because of the localized nature of this impact. Furthermore, compliance with FAA regulations and Mitigation Measures PHS-1 and PHS-2 (see Section 4.11.10) would reduce this potential impact. Therefore, impacts of the proposed OWEF would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Seismic Hazards

As discussed under Section 4.11.9.4 (Construction), potential impacts would be site specific and would be reduced by the implementation of Mitigation Measure PHS-3 (see Section 4.11.10). Therefore, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

As discussed under Section 4.11.9.4 (Construction), the project site is considered to have low potential for liquefaction; therefore the potential for lateral spreading to occur is also considered low. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects and proposed OWEF would not contribute to cumulative impacts.

Hazardous Materials

Similarly discussed under Section 4.11.9.4 (Construction), the use, storage, and disposal of hazardous materials and waste associated with the proposed OWEF could result in potential adverse health and environmental impacts associated with improper management of these materials. Implementation of a health and safety program during operation of the project (See BMPs in Section 4.11.10) would reduce impacts. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Similarly discussed under Section 4.11.9.4 (Construction), operation of the proposed OWEF would result in a potential hazard to the public or personnel if a hazardous material spill or leak were to occur. Additionally, grading, drilling, or excavation at the project site has the potential to mobilize hazardous materials currently in the soil, which could result in exposure of personnel and other sensitive receptors such as plants and wildlife to contaminant levels that could result in short-term and/or long-term health effects. Implementation of a hazardous materials management plan (See BMPs in Section 4.11.10) and Mitigation Measure PHS-4 (see Section 4.11.10) would ensure that potential impacts are reduced. This impact does not have the potential to combine with contamination from spills from other projects to result in a cumulative impact due to the site-specific nature of soil contamination and implementation of hazardous materials management plan that would ensure proper cleanup and disposal of contaminated soil.

Similarly discussed under Section 4.11.9.4 (Construction), the potential exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site; however, Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Similarly discussed under Section 4.11.9.4 (Construction), the potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. Implementation of a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use of hazardous materials at the project site. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Similarly discussed under Section 4.11.9.4 (Construction), pad-mount transformers at each WTG site could leak oil to the underlying soil. The Applicant would install a containment vessel (see BMPs in Section 4.11.10) at each WTG site. A containment vessel is a concrete curb around a raised concrete pad which the pad-mounted transformers rest on. The area between the concrete pad and curb is filled with coarse aggregate, with sufficient void space to hold the volume of oil in the transformer. The bottom of the containment would consist of a filter type media to bind oil particles and yet let clean water to pass through. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Emergency Response

During project operation and maintenance, minimal traffic is expected to occur and is not likely to interfere with emergency response activities. Therefore, this impact would not combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Public Health

With regard to generating disease vectors, project operations could potentially attract disease vectors by allowing standing water, trash piles, or open containers to accumulating at the site, potentially resulting in a hazard to construction personnel or the general public. However, implementation of PHS-8 would reduce this impact to acceptable levels. Mitigation would reduce this impact to a level that would not combine with other projects; therefore, impacts of the proposed project would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects.

Intentionally Destructive Acts

Depending on the severity of the event, fixed components of a wind facility could be damaged or destroyed, resulting in economic, safety, and environmental consequences. Equipment used in servicing the wind facility could also be impacted, potentially resulting in loss of life. In general, the consequences of an intentionally destructive act, including sabotage or terrorist attack on a wind facility would be expected to be similar to those discussed under seismic hazards and hazardous materials regarding accidental and natural events. The potential consequences of such events would be site-specific and unlikely to occur. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and the proposed OWEF would not contribute to cumulative impacts.

4.11.9.6 Decommissioning

Aircraft Operations

Safety hazards to aircraft operations could occur during decommissioning of the Proposed Action. This impact does not have the potential to combine with impacts of other projects because of the localized nature of this impact. Furthermore, compliance with FAA regulations and Mitigation Measures PHS-1 and PHS-2 (see Section 4.11.10) would reduce this potential impact. Therefore, impacts of the proposed OWEF would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Seismic Hazards

As discussed under Sections 4.11.9.4 (Construction) and 4.11.9.5 (Operation and Maintenance), potential impacts would be site specific and would be reduced by the implementation of Mitigation Measure PHS-3 (see Section 4.11.10). Therefore, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

As discussed under Sections 4.11.9.4 (Construction) and 4.11.9.5 (Operation and Maintenance), the project site is considered to have low potential for liquefaction; therefore the potential for lateral spreading to occur is also considered low. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Hazardous Materials

Similarly discussed under Sections 4.11.9.4 (Construction) and 4.11.9.5 (Operation and Maintenance), the use, storage, and disposal of hazardous materials and waste associated with the proposed OWEF could result in potential adverse health and environmental impacts associated with improper management of these materials. Implementation of a health and safety program during operation of the project (See BMPs in Section 4.11.10) would reduce impacts. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and proposed OWEF would not contribute to cumulative impacts.

Similarly discussed under Sections 4.11.9.4 (Construction) and 4.11.9.5 (Operation and Maintenance), the proposed OWEF would result in a potential hazard to the public or personnel if a hazardous material spill or leak were to occur. Additionally, grading, drilling, or excavation at the project site has the potential to mobilize hazardous materials currently in the soil, which could result in exposure of personnel and other sensitive receptors such as plants and wildlife to contaminant levels that could result in short-term and/or long-term health effects. Implementation of a hazardous materials management plan (See BMPs in Section 4.11.10) and Mitigation Measure PHS-4 (see Section 4.11.10) would ensure that potential impacts are reduced. This impact does not have the potential to combine with contamination from spills from other projects to result in a cumulative impact due to the site-specific nature of soil contamination and implementation of a hazardous materials management plan that would ensure proper cleanup and disposal of contaminated soil.

Similarly discussed under Sections 4.11.9.4 (Construction) and 4.11.9.5 (Operation and Maintenance), the potential exists for hazardous materials being used at the project site to be released into the desert washes and ephemeral streams that traverse the site; however, Mitigation Measure PHS-6 (see Section 4.11.10) would require hazardous materials use and storage to occur at a distance from watercourses, which would reduce the potential for any spilled materials to enter watercourses. This impact would be site-specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Similarly discussed under Sections 4.11.9.4 (Construction) and 4.11.9.5 (Operation and Maintenance), the potential also exists for motor vehicle fuel to be released from on-site storage tanks or for transformer oil to be released at the project substation if a leak were to occur, potentially resulting in a hazard to soil, water, wildlife, or personnel at the project site. Implementation of a spill prevention and response plan (see Section 4.11.10) would reduce potential impacts from the use of hazardous materials at the project site. This impact would be site specific and is not expected to combine with similar impacts of past, present, or reasonably foreseeable projects.

Emergency Response

Similarly discussed under Section 4.11.9.4 (Construction), traffic associated with decommissioning could interfere with emergency response to the project site or emergency evacuation procedures in the event of an emergency such as a wildfire, a natural gas pipeline explosion, or a chemical spill at the project site. Project related traffic could also potentially interfere with emergency response to residences in the project vicinity. To ensure emergency access to the project site during decommissioning, implementation of Mitigation Measure PHS-8 and a traffic management plan require the Applicant to appoint an Emergency Response Liaison to coordinate the reduction of construction-related traffic for the duration of any emergency at or nearby the project site and preparation of a traffic management plan that includes assurance of access for emergency vehicles to the project site.

This impact has the potential to combine with other current and future projects that would generate high volumes of traffic on area roadways and whose construction schedules overlap with that of the proposed OWEF by creating a cumulative traffic burden on regional roadways as a result of an abundance of construction vehicles. However given the rural nature of the project area and the fact that most cumulative projects in the project vicinity would not generate high volumes of traffic, the potential for a cumulative impact on emergency response is low.

Public Health

With regard to generating disease vectors, decommissioning activities could potentially attract disease vectors by allowing standing water, trash piles, or open containers to accumulating at the site, potentially resulting in a hazard to construction personnel or the general public. However, implementation of Mitigation Measure PHS-8 would reduce this impact to acceptable levels. Mitigation would reduce this impact to a level that would not combine with other projects, therefore, impacts of the proposed project would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects.

Intentionally Destructive Acts

Depending on the severity of the event, fixed components of a wind facility could be damaged or destroyed, resulting in economic, safety, and environmental consequences. Equipment used in dismantling the wind facility could also be impacted, potentially resulting in loss of life. In general, the consequences of an intentionally destructive act, including sabotage or terrorist attack on a wind facility would be expected to be similar to those discussed under seismic hazards and hazardous materials regarding accidental and natural events. The potential consequences of such events would be site-specific and unlikely to occur. As such, proposed OWEF impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects, and the proposed OWEF would not contribute to cumulative impacts.

4.11.9.7 CEQA Significance Determinations

Proposed OWEF cumulative impacts related to aircraft operations, seismic hazards, and hazardous materials are localized in nature and site specific. Potential impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects. Therefore, significance determinations are not provided below for CEQA Significance Criteria PH&S-1, PH&S-3, PH&S-4 or PH&S-5.

- **PH&S-8.** Traffic associated with the project during construction and decommissioning could interfere with emergency response to the project site or emergency evacuation procedures in the event of an emergency. This impact has the potential to combine with other current and future projects that would generate high volumes of traffic on area roadways and whose construction schedules overlap with that of the proposed OWEF. Although the potential for a cumulative impact to emergency response is unlikely to occur due to the rural nature of the project area and the fact that most cumulative projects in the project vicinity would not generate high volumes of traffic, with the implementation of Mitigation Measure PHS-7 and a traffic management plan, the project's contribution to cumulative impacts would be less than significant.

4.11.10 Mitigation Measures

The proposed OWEF would include implementation of recommended Best Management Practices (BMPs) from the BLM's Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States (BLM, 2005). In addition to the BLM BMPs, project-specific mitigation measures have been developed to reduce and/or avoid potential public health and safety impacts associated with construction, operation and maintenance, and decommissioning of the proposed OWEF. These BLM BMPs and project-specific mitigation measures are presented below.

Facility Commitments

- Containment vessels would be installed at each WTG site. A containment vessel is a concrete curb around a raised concrete pad which the pad-mounted transformers rest on. The area between the concrete pad and curb is filled with coarse aggregate, with sufficient void space to hold the volume of oil in the transformer. The bottom of the containment would consist of a filter type media to bind oil particles and yet let clean water to pass through.

- Installation of Siemens technology which prevents blade rotation on individual turbines as needed to avoid causing shadow flicker on residences.

BLM Best Management Practices

- The FAA-required notice of proposed construction shall be made as early as possible to identify any air safety measures that would be required.
- "Good housekeeping" procedures shall be developed to ensure that during operation the site will be kept clean of debris, garbage, fugitive trash or waste, and graffiti; to prohibit scrap heaps and dumps; and to minimize storage yards.
- A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. Under this plan, informational signs would be used to inform the public of temporary traffic hazards, flaggers would be employed when equipment would block throughways, and traffic cones would be used to identify any temporary changes in lane configuration necessary to minimize traffic impacts. This plan would be submitted to the BLM and Imperial County Department of Public Works for review and approval.
- If pesticides are used on the site, an integrated pest management plan shall be developed to ensure that applications would be conducted within the framework of BLM and DOI policies and entail only the use of EPA-registered pesticides. Pesticide use shall be limited to nonpersistent, immobile pesticides and shall only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.
- Operators shall develop a hazardous materials management plan addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall identify all hazardous materials that would be used, stored, or transported at the site. It shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan shall also identify requirements for notices to federal and local emergency response authorities and include emergency response plans.
- Operators shall develop a waste management plan identifying the waste streams that are expected to be generated at the site and addressing hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. This plan shall address all solid and liquid wastes that may be generated at the site.
- Operators shall develop a spill prevention and response plan identifying where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions for each material or waste, the locations of spill response kits on site, a procedure for ensuring that the spill response kits are adequately stocked at all times, and procedures for making timely notifications to authorities.
- A safety assessment shall be conducted to describe potential safety issues and the means that would be taken to mitigate them, including issues such as site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.
- A health and safety program shall be developed to protect both workers and the general public during construction, operation, and decommissioning of a wind energy project. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents; and measures for reducing occupational electric and magnetic fields [EMF] exposures); establish fire safety evacuation procedures; and

define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established.

- Regarding public health and safety, the health and safety program shall establish a safety zone or setback for wind turbine generators from residences and occupied buildings, roads, ROWs, and other public access areas that is sufficient to prevent accidents resulting from the operation of wind turbine generators. It shall identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or decommissioning activities. It shall also identify measures to be taken during the operation phase to limit public access to hazardous facilities (e.g., permanent fencing would be installed only around electrical substations, and turbine tower access doors would be locked).
- Operators shall consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) shall be identified and addressed in the traffic management plan.
- If operation of the wind turbines is expected to cause significant adverse impacts to nearby residences and occupied buildings from shadow flicker, low-frequency sound, or EMF, site-specific recommendations for addressing these concerns shall be incorporated into the project design (e.g., establishing a sufficient setback from turbines).
- The project shall be planned to minimize electromagnetic interference (EMI) (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission [FCC] regulations. Signal strength studies shall be conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) shall be avoided.
- The project shall be planned to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.
- Operators shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire.
- Explosives shall be used only within specified times and at specified distances from sensitive wildlife or streams and lakes, as established by the BLM or other federal and state agencies.
- Secondary containment shall be provided for all on-site hazardous materials and waste storage, including fuel. In particular, fuel storage (for construction vehicles and equipment) shall be a temporary activity occurring only for as long as is needed to support construction activities.
- Wastes shall be properly containerized and removed periodically for disposal at appropriate off-site permitted disposal facilities.
- In the event of an accidental release to the environment, the operator shall document the event, including a root cause analysis, appropriate corrective actions taken, and a characterization of the resulting environmental or health and safety impacts. Documentation of the event shall be provided to the BLM authorized officer and other federal and state agencies, as required.
- Any wastewater generated in association with temporary, portable sanitary facilities shall be periodically removed by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews shall be adequate to support expected on-site personnel and shall be removed at completion of construction activities.
- Temporary fencing shall be installed around staging areas, storage yards, and excavations during construction to limit public access.

- Permanent fencing shall be installed and maintained around electrical substations, and turbine tower access doors shall be locked to limit public access.
- In the event an installed wind energy development project results in EMI, the operator shall work with the owner of the impacted communications system to resolve the problem. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from wind turbines can be quickly recognized.

Project-Specific Mitigation Measures

PHS-1 Prior to issuance of building permits, the Applicant shall submit documentation to the BLM and Imperial County Planning & Development Services demonstrating a Determination of No Hazard to Air Navigation from the Federal Aviation Administration (FAA) of Form 7460-1 (Notice of Proposed Construction or Alteration). Documentation shall also be furnished to the BLM and Imperial County Planning & Development Services demonstrating that a copy of the approved form(s) has been provided to the operator of the Emory Ranch private airport. All project components shall have lighting and marking required by the Federal Aviation Administration so not to create a hazard to air navigation. Lighting placed on wind turbines must be compatible with military night-vision goggles utilized by the Department of the Navy.

PHS-2 All wind turbines constructed within the area 1.5 nautical miles south of the centerline of the Department of Defense Airspace Consultation Area shall be less than 400 feet tall at the maximum blade tip height.

PHS-3 Prior to the issuance of building or grading permits, the Applicant shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it for approval to the BLM for federal lands and the Imperial County Planning & Development Services for County lands. The geotechnical study must be signed by a California-registered professional engineer and must identify the following:

- Location of fault traces and potential for surface rupture;
- Potential for seismically induced ground shaking, liquefaction, landslides, differential settlement, and mudflows;
- Stability of existing cut-and-fill slopes;
- Collapsible or expansive soils;
- Foundation material type;
- Potential for wind erosion, water erosion, sedimentation, and flooding;
- Location and description of unprotected drainages that could be impacted by the proposed development; and
- Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.

The Applicant shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The Applicant shall not locate project facilities on or immediately adjacent to a fault trace. The BLM and Imperial County Planning & Development Services will evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided.

PHS-4 If, during grading or excavation work, the contractor observes visual or olfactory evidence of contamination or if soil contamination is otherwise suspected, work near the excavation site shall be terminated, the work area cordoned off, and appropriate health and safety procedures implemented for the location by the contractor's Health & Safety Officer. Samples shall be collected by an Occupational Safety and Health Administration-trained individual with a minimum of 40-hours hazardous material site worker training. Laboratory data from suspected contaminated material shall be reviewed by the contractor's Health and Safety Officer. If the sample testing determines that contamination is not present, work may proceed at the site. However, if contamination is detected above regulatory limits, the BLM and the Imperial County Public Health Department shall be notified. All actions related to encountering unanticipated hazardous materials at the site shall be documented and submitted to the BLM for federal lands and the Imperial County Public Health Department for County lands.

PHS-5 If herbicides are utilized, the contractor or personnel applying herbicides must have all the appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use. Herbicides shall be mixed and applied in conformance with the product manufacturer's directions. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and waterbodies, herbicides shall not be applied directly to wildlife, products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed, and herbicides shall not be applied within 50 feet of any surface water-body when water is present. Herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.

PHS-6 The Applicant shall site all fueling, hazardous materials storage areas, and operation and maintenance activities involving hazardous materials at least 100 feet away from blue-line drainages as identified on U.S. Geological Survey topography maps and wetlands.

PHS-7 The Applicant shall appoint an Emergency Response Liaison to coordinate the reduction of construction-related traffic for the duration of any emergency at or nearby the project site. The BLM, Imperial County Fire Department, Imperial County Sheriff's Office, and the California Highway Patrol shall be provided with the construction schedule and the on-site contact information for the Liaison prior to construction. The Liaison shall be immediately reachable at all times during project construction. The Liaison shall have radio contact with project construction vehicles at all times to coordinate traffic reduction measures. In addition, the Liaison shall coordinate with the BLM, Imperial County Fire Department, the Imperial County Sheriff's Office and the California Highway Patrol to establish emergency procedures for access to the project site in the event of an emergency.

PHS-8 In order to eliminate the risk of generating disease vectors at the site, during project construction and operations, the Applicant shall ensure that trash is stored in closed containers and removed from the site at regular intervals. Open containers shall be inverted and construction ditches shall not be allowed to accumulate water. Construction and maintenance operations shall not generate standing water. Naturally occurring depressions, drainages, and pools at the site shall not be drained or filled without consulting with the appropriate resource agency (BLM, Imperial County, U.S. Army Corps of Engineers (ACOE), U.S. Fish and

Wildlife Service (USFWS), California Department of Fish and Game (CDFG)) and obtaining the appropriate permits. The environmental monitor will ensure that standing water and large quantities of trash do not accumulate on site.

Mitigation Measures PHS-1 and PHS-2 would substantially reduce potential impacts to aircraft operations by requiring compliance with conditions stipulated by the Department of Defense and the FAA. These measures would ensure that the project would pose no hazards to air navigation and would not compromise the operational mission of the DOD Airspace Consultation Area. Mitigation Measure PHS-3 would effectively minimize impacts from geologic hazards by requiring investigation of local soil and geologic conditions at the proposed wind turbine locations and requiring that turbine foundations be designed and constructed in accordance with engineering recommendations addressing local conditions and hazards, including avoidance of fault traces. Mitigation Measures PHS-4 through PHS-7 would substantially reduce potential impacts associated with the use, storage, or handling of hazardous substances or the existence of other hazardous conditions at the project site, by requiring the implementation of preventive measures and precautions. These measures also require that necessary licenses and permits be obtained, and that hazardous substances only be handled and used by properly trained and certified personnel. Mitigation Measure PHS-8 would substantially reduce risk of generating disease vectors by implementing preventive measures, avoiding the establishment of conditions that might promote disease, and monitoring conditions at the project site.

Because these mitigation measures would not disturb or disrupt the natural environment, including the emission of pollutants or release of hazardous substances, and would not threaten the health or safety of people, their implementation would not result in adverse impacts.

4.11.11 Residual Impacts After Mitigation

Although unlikely, following implementation of BMPs and mitigation measures provided in Section 4.11.10, it is possible that an accidental hazardous material release could occur and could cause a public health and safety risk to the human environment. No other residual impacts to public health and safety are expected to occur as a result of construction, operation and maintenance, and/or decommissioning of the proposed OWEF or an alternative.

4.12 Recreation

4.12.1 Methodology for Analysis

The following discussion identifies and analyzes the impacts of the Proposed Action and alternatives on recreational resources. Existing and planned recreational resources were identified through a variety of sources. Recently published maps including United States Geological Survey (USGS) topographic maps and available aerial photos were used to verify the location of recreational areas and resources. Federal, State, and local (County) plans, such as land management plans and general plans, were consulted to describe the project regions with regards to recreation. A site visit was made in May 2010 to identify on-site land uses, and extensive internet searches of agency (federal, State, and local) websites were conducted to verify the location and specifics of both existing and planned recreational facilities.

Impacts/effects associated with other existing land use activities are discussed in separate sections of Chapters 3 and 4, and are as follows: Lands and Realty (Section 3.6 and 4.6); Livestock Grazing (Section 3.7); Multiple-Use Classes (Sections 3.9 and 4.8); Mineral Resources (Sections 3.8 and 4.7); and Wild Horses and Burros (Section 3.21).

4.12.2 CEQA Significance Criteria

The indicators listed below were used to determine if the proposed OWEF would result in significant impacts to recreational resources under CEQA. These indicators below are the same as the significance criteria for recreation listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines:

Rec-1 *Increase the use of existing neighborhood and regional parks or other recreational facilities such that the physical deterioration of the facility would occur or be accelerated; or*

Rec-2 *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

For the proposed OWEF, the Rec-2 criterion was determined to result in no impacts under all alternatives since the development of recreational facilities is not included in the Proposed Action. As discussed in Section 4.13 (Social and Economic Issues), construction of the proposed OWEF would require a peak of approximately 315 workers. It is anticipated that the majority of construction personnel would stay in hotels and rental properties in El Centro for the duration of construction. Operation and maintenance of the proposed OWEF would require a workforce of approximately 17 staff year-round, and approximately 10 temporary or contract workers for 12 weeks per year. It is anticipated that few, if any, workers would relocate to the area permanently. Consequently, construction, operation, and maintenance of the OWEF would not substantially increase the population and the project would not require the construction of recreational facilities. Appendix G of the CEQA Guidelines also includes a criterion under Public Services for potential adverse physical impacts associated with the provision of new or physically altered government facilities, the construction of which could cause environmental impacts, including parks. For the reasons stated under the Rec-2 criterion, the Proposed Action would not result in the construction of new parks and would not result in the physical alteration of parks. There would be no impact to recreational facilities and parks; therefore, the Rec-2 and Public Services criteria are not discussed further in this section.

4.12.3 Alternative 1: Proposed Action

4.12.3.1 Direct and Indirect Impacts

Construction

The proposed OWEF site is currently used for recreation activities, including camping, off-highway vehicle (OHV) use, and recreational shooting. The majority of the project site is within Multiple-Use Class L (Limited Use), under the BLM's CDCA Plan. This classification allows for low to moderate recreation activities, including non-competitive vehicle touring and events on approved routes of travel (BLM, 1980). In addition, the Western Colorado Desert Routes of Travel Designations (WECO) is an amendment to the CDCA Plan. There are approximately 27 open routes of travel designated within the project site (BLM, 2002). A map of the open routes designated by WECO is included in Appendix A, Figure 3.13-1.

During the construction period, the project site would be closed to the public, which would result in a temporary disruption to current recreational uses and access roads would have gates or signs installed to limit public access for safety reasons. However, access would be preserved for private landowners. Upon completion of the construction period, access to the OWEF site would be restored for recreational uses. As such, construction of the Proposed Action would temporarily disrupt existing recreational uses and/or interfere with the public's access to the project area.

In addition to this direct impact to recreational resources, the temporary preclusion of the OWEF site could result in indirect impacts to surrounding recreational resources due to increased usage of recreational resources surrounding the project site (see Figure 3.13-2 and Table 3.13-1 for a map and a list of the surrounding recreation areas, respectively). In addition to local recreational users and visitors, the project would result in a temporary increase in population due to the influx of construction workers. As proposed, the project would require a peak construction workforce of up to approximately 356 workers. Construction workers are expected to travel to the site from various locations throughout southern California. The number of construction workers expected to relocate to the surrounding area is not expected to be substantial; however, any workers that relocate to these areas may use the neighborhood and regional recreation areas in the vicinity of the project site. The Jacumba Wilderness, Yuha Basin, Coyote Mountains, and Table Mountains are in the immediate vicinity of the project site, which consist of thousands of acres of land available for the same recreation activities as the project site, including camping, hunting, and hiking. OHV use is not allowed in wilderness areas and various other recreation sites; however, it is allowed at the Yuha Basin and Plaster City Open Area which are both within ten miles of the project site. Given that there are several large recreation areas in the project vicinity, the limited addition of people to the area, and the short-term duration of construction, the potential temporary increase in use by project personnel at any one recreation area is not anticipated to be at such a level that would lead to the increased physical deterioration of the recreation resources.

Although the Proposed Action would not result in deterioration of any recreational facilities as a result of increased use, construction of the project would alter the existing character of the proposed OWEF site and, therefore, may affect on-site and surrounding recreational uses of the site as a result of the altered viewshed, increased noise, altered airplane and glider routes, and possible safety concerns. These issues are addressed in Sections 4.18 (Visual Resources), 4.9 (Noise), 4.16 (Transportation and Public Access), and 4.11 (Public Health and Safety), respectively.

As indicated in Table 3.13-1 (Recreation and Open Areas), the developed recreation resources that are located within the project site and in the surrounding area predominantly include camping and OHV use. Since there is a concentration of OHV use in the vicinity of the project site, it is possible that in reaction to existing OHV routes being restricted during project construction, some OHV recreationists may choose to utilize illegal OHV routes or create new, unauthorized OHV routes, thereby contributing to unmanaged or unauthorized recreational uses. Impacts associated with illegal OHV use include disturbances to surrounding desert lands that may be preserved or under management plans that protect biological, cultural, or geologic resources. However, impacts associated with illegal OHV use are expected to be limited since there are several large recreation areas in the project vicinity that are specifically designated for OHV use, and that would not be affected by the construction of the Proposed Action.

Operation and Maintenance

As mentioned above under "Construction," the proposed OWEF site is currently used for recreational purposes and there are several recreational resources surrounding the proposed site. The proposed OWEF site would be reopened during the operation period; therefore, the public would have access to the site and use of the site for recreational purposes would not be discouraged.

Operation of the project would require a permanent staff of up to 12 individuals. It is expected that some of these individuals may already reside in the area and operation of the project would not result in a substantial influx of people to the area. Therefore, given that there are several parks and recreational facilities in the project vicinity and the limited addition of project-related operations and maintenance employees to the area, there would not be a detectable increase in use at any one recreational facility or area resulting in the physical deterioration of existing recreational resources. However, as discussed under "Construction," the Proposed Action would alter the existing character of the proposed OWEF site and, therefore, may affect on-site and surrounding recreational uses of the site as a result of the altered viewshed, increased noise, altered airplane and glider routes, and possible safety concerns. These issues are addressed in Sections 4.18 (Visual Resources), 4.9 (Noise), 4.16 (Transportation and Public Access), and 4.11 (Public Health and Safety), respectively.

Decommissioning

As mentioned above under "Construction," the proposed OWEF site is currently used for recreational purposes and there are several recreational resources surrounding the proposed site. Decommissioning activities would cause temporary, indirect disturbance to users of the recreation areas similar to those described under "Construction" above. However, after the Proposed Action has been decommissioned, users would experience a beneficial impact, as the site would return to its undeveloped state.

4.12.3.2 CEQA Significance Determinations

Construction

- **Rec-1.** The temporary disruption to the project site as a result of construction could increase the use of neighborhood and regional recreation facilities such that the physical deterioration of the facilities may occur. However, the physical deterioration of recreational resources would be less than significant given the limited addition of people to the area, the short-term duration of construction, and the numerous recreation opportunities in the project vicinity.

Operation and Maintenance

- **Rec-1.** During the operation period of the proposed OWEF, the project site would be available for recreational uses. Therefore, the potential increase in the use of neighborhood and regional recreational facilities as a result of construction on the project site would no longer be an impact. In addition, operation of the project would require a permanent staff of up to 12 individuals. This minimal increase in potential long-term recreation users would not substantially contribute to the physical deterioration of neighborhood and regional recreational opportunities. Therefore, this impact would be less than significant.

Decommissioning

- **Rec-1.** The temporary disruption to the project site as a result of decommissioning activities could increase the use of neighborhood and regional recreation facilities such that the physical deterioration of the facilities may occur. However, the physical deterioration of recreational resources would be less than significant given the limited addition of people to the area, the short-term duration of decommissioning activities, and the numerous recreation opportunities in the project vicinity.

4.12.4 Alternative 2: 137 Wind Turbine Generators

4.12.4.1 Direct and Indirect Impacts

Alternative 2 is conceptually similar to the Proposed Action (Alternative 1), but with 21 fewer WTGs (137 total). Compared to the OWEF, the turbines eliminated under this alternative include four in the southern portion of Site 2, five in the northeast portion of Site 1, and twelve along the perimeter of the northwest portion of Site 1.

Construction

During construction of this alternative, potential impacts to recreational resources would be the same as described under “Construction” for Alternative 1. However, since construction of Alternative 2 would be completed in a single phase, the duration of impacts to recreational resources would occur over a shorter period of time as compared to Alternative 1.

Operation and Maintenance

During operation and maintenance of this alternative, potential impacts on recreational resources would be the same as described under “Operation and Maintenance” for Alternative 1.

Decommissioning

During decommissioning of this alternative, potential impacts on recreational resources would be the same as described under “Decommissioning” for Alternative 1.

4.12.4.2 CEQA Significance Conclusions

The CEQA significance determinations of recreation impacts for Alternative 2 would be identical to Alternative 1.

4.12.5 Alternative 3: 105 Wind Turbine Generators

4.12.5.1 Direct and Indirect Impacts

Alternative 3 is conceptually similar to the Proposed Action (Alternative 1), but with 53 fewer WTGs (105 total). Compared to the OWEF, the turbines eliminated under this alternative include all 16 WTGs at Site 2, 22 in the northeast portion of Site 1, the two near the private parcel, the one on the private parcel, and twelve along the perimeter of the northeast portion of Site 1.

Construction

During construction of this alternative, potential impacts to recreational resources would be the same as described under "Construction" for the Alternative 1. However, with the elimination of Site 2, a smaller number of turbines would be constructed. Additionally, construction of Alternative 3 would be completed in a single phase, so the duration of impacts to recreational resources would occur over a shorter period of time as compared to Alternative 1. Nonetheless, temporary effects would still be experienced.

Operation and Maintenance

During operation and maintenance of this alternative, potential impacts on recreational resources would be the same as described under "Operation and Maintenance" for Alternative 1.

Decommissioning

During decommissioning of this alternative, potential impacts on recreational resources would be the same as described under "Decommissioning" for Alternative 1.

4.12.5.2 CEQA Significance Conclusions

The CEQA significance determinations of recreation impacts for Alternative 3 would be identical to Alternative 1.

4.12.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.12.6.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would not amend the CDCA Plan. As a result, no wind energy project would be constructed, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because there would be no amendment to the CDCA Plan and no wind project approved for the site under this alternative, no new structures or facilities would be constructed or operated on the site and no new ground disturbance would occur. As a result, none of the impacts on recreational resources from construction or operation of the Proposed Action would occur.

4.12.6.2 CEQA Significance Conclusions

There would be no impacts to recreational resources under Alternative 4.

4.12.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.12.7.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the site, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would remain in its existing condition unless another use is designated in this amendment. As a result, access to the site would not change and recreation activities would continue without any disruptions from construction of wind energy facilities. As such, this No Project Alternative would have no adverse impact on recreational resources within and adjacent to the site in the long term.

4.12.7.2 CEQA Significance Conclusions

There would be no impacts to recreational resources under Alternative 5.

4.12.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.12.8.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF, but would amend the CDCA Plan to allow for other wind projects on the site. As a result, it is possible that another wind energy project could be constructed on the site. If this were to occur, it is likely that construction and operation impacts to recreational resources would be similar to the impacts described for Alternative 1.

4.12.8.2 CEQA Significance Conclusions

The CEQA significance determinations of recreation impacts for Alternative 6 would be identical to Alternative 1.

4.12.9 Cumulative Impacts

4.12.9.1 Geographic Extent/Context

Construction of the proposed OWEF would have temporary effects on the existing recreation activities on the Project site and several surrounding recreation areas listed in Section 3.13 (Table 3.13-1). The geographic extent of analysis consists of the boundaries encompassing these areas, including the northern boundaries of the Coyote Mountains/Fossil Site and Plaster City OHV Open Area to the southern boundaries of Table Mountain and the Jacumba Wilderness. Also included in this analysis is the eastern boundary of the Cleveland National Forest to the eastern boundary of the Yuha Basin (see Figure 3.13-2). This geographic extent was selected based on the distances of the local and regional recreation areas (listed in Table 3.13-1) that allow for the same or similar recreation activities as the proposed OWEF site and are at a distance from the OWEF site (approximately 16 miles) such that they represent a reasonable alternative for potential recreationalists.

4.12.9.2 Existing Cumulative Conditions

Past and present projects occurring in the vicinity of the Proposed Action site include recreational activities, mining, and quarry activities in and around Plaster City. Potential cumulative recreation impacts surrounding the proposed OWEF site may result from the new structures and activities that could restrict access to recreational resources and/or physically degrade existing recreational facilities and resources.

4.12.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Table 4.1-2 summarizes the cumulative projects that would have potential to combine the Proposed Action and result in cumulative recreation impacts. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR.

The subset of cumulative project listed in Table 4.1-1 within a 16-mile radius of the proposed OWEF that would impact designated recreation lands are listed in Table 4.12-1, along with the acreage of each cumulative project site and the surrounding recreational resources that may be affected by cumulative impacts. For the cumulative projects that have undergone an environmental review, specific acreage and on-site recreational resources are included; otherwise, the determination for potentially affected resources is based on the designated recreation areas immediately surrounding the project site.

Table 4.12-1. Recreational Resources Potentially Affected by Cumulative Projects

Project Name	Approximate Acreage	Potentially Affected Recreational Resource(s)
National Quarries – CACA 050635 (wind testing)	4,435	• Cleveland National Forest • Sawtooth Mountains
Imperial Valley Solar – Solar Two, CACA 047740 (Stirling Energy Systems (SES))	6,440	• 3,250 acres within the Yuha Desert Recreation Lands • 10 on-site WECO routes • 640 acres of private recreation land surrounded by the project
Centinela Solar (SDG&E)	2,067	• Yuha Desert Recreation Lands (Environmental Assessment is pending)
La Posta Mountain Warfare Training Facility (Naval Special Warfare Center)	2,250	• A portion of the project site is within the boundaries of the Cleveland National Forest
Coyote Wells Specific Plan (Wind Zero Group, Inc.)	944	• 380 acres of land within the County's recreation land use and zoning designations
Ketchum Ranch - TM 5524 (residential subdivision)	1,250	• Table Mountain
Imperial Solar Energy Center West (CSOLAR Development, LLC)	1,130	• Yuha Desert Recreation Lands • Plaster City OHV Open Area • Limited use routes located within and adjacent to the transmission line
Imperial Solar Energy Center South (CSOLAR Development, LLC)	946.6	• Yuha Desert Recreation Lands • On-site OHV routes
SDG&E Proposed Photovoltaic Solar Field, CACA-051625	100	• Coyote Mountains • Coyote Mountains Fossil Site
Mount Signal Solar Farm (8 Minute / SDG&E)	1,375	• Yuha Desert Recreation Lands
Renewergy, LLC, CACA 048004 (wind testing)	N/A	• Plaster City OHV Open Area • Coyote Mountains • Coyote Mountains Fossil Site • Yuha Desert Recreation Lands
Sunrise Powerlink (through the southwestern portion of Imperial County and the southeastern portion of San Diego Count)	55 miles	• Yuha Desert Recreation Lands • Plaster City OHV Open Area • Anza National Historic Trail • Jacumba Wilderness • Anza-Borrego Desert State Park • Table Mountain • Carrizo Gorge • In-Ko-Pah Mountains • Lark Canyon OHV Area • McCain Valley Resource Conservation Area • Cleveland National Forest

*Specific cumulative project information is not available.

4.12.9.4 Construction

Construction activities associated with the Proposed Action are expected to result in short-term adverse impacts to recreational resources in the project area. It is expected that some of the cumulative projects described above which are not yet built may be under construction at the same time as the proposed OWEF. As a result, there may be substantial short-term impacts during construction of those cumulative projects related to recreational resources, and the Proposed Action could contribute to these impacts.

Of the projects listed in Table 4.12-1, construction of the following projects is expected to occur at the same times as the proposed OWEF: development of Phase I of the Coyote Wells Specific Plan; tower erection for the Sunrise Powerlink in the vicinity of Ocotillo was completed at the end of 2011, but stringing activities will continue into 2012; construction of the Imperial Solar Center West and South projects is expected to begin in September 2011 and last for 17 months; and construction of Centinela Solar, which is expected to be online by April 2013, will also be occurring during that time. Construction dates for the Imperial Valley Solar Project, SDG&E Proposed Photovoltaic Solar Field, Renewergy wind testing site, National Quarries, La Posta Mountain Warfare Training Facility, and Ketchum Ranch are not known. However, considering that these projects are reasonably foreseeable, the assumption is that construction periods would overlap with the proposed OWEF.

Regionally, there have been both positive and negative impacts to recreational resources as a result of development projects within Imperial Valley. Development of highway access to the region has provided direct vehicular access to open desert scenery for residents throughout southern California. This increased access improved the recreational experience for some users by making the area more accessible, but has detracted from the recreational experience for other users who preferred remote camping, hiking, and hunting away from populated areas.

Presently, as discussed above, numerous development projects, including the Proposed Action, would temporarily remove large acreages of land from potential recreational use during the construction period. The combined effect of construction of past, present, and reasonably foreseeable projects in the Imperial Valley would adversely affect recreation activities and potentially result in indirect impacts to the surrounding recreational resources for the duration of construction which is likely to last for at least months based on currently projected schedules. However, because the operation of the proposed OWEF, unlike some of the other cumulative projects, would allow for recreation activities to resume on the project site after construction in the areas surrounding the wind turbines and associated facilities. Therefore, recreation impacts due to the Proposed Action, alternatives, or the cumulative project during the construction period would be temporary.

4.12.9.5 Operation and Maintenance

Operation of the Proposed Action is not expected to result in long-term adverse impacts associated with the disruption of recreational uses or interfere with the public's right of access to the project site. In addition, increase in use by project personnel at any one recreation area is not anticipated to be significant or result in a detectable physical deterioration of recreational resources.

It is expected that some of the cumulative projects described above will be operational during the same time period as the Proposed Action. In particular, development of the solar energy facilities, the components of the Coyote Wells Specific Plan, Ketchum Ranch, and the warfare training facility (all listed in Table 4.12-1) would result in the permanent conversion of approximately 16,000 acres of land within or adjacent to recreational resources. As a result of these projects, all other land uses would be precluded, including recreation opportunities; and these developments would adversely affect the viewscape which would result in some users seeking out other areas of the desert for their recreation activities (see the cumulative analysis in the Visual Resources section). As a result, there may be substantial long-term recreation impacts during operation of these projects, such as the conversion of recreation lands to non-recreational land uses. The proposed OWEF would also contribute to viewscape impacts, but would not remove any land from recreational use as the project site would remain available for recreation activities during its operational life. Therefore, the Proposed Action would only make a minor contribution to cumulative recreation impacts during the operation period.

4.12.9.6 Decommissioning

Decommissioning activities would cause temporary, indirect disturbances to users of the recreation areas similar to those described under "Construction" above. However, after the OWEF has been decommissioned, the site would return to an undeveloped condition. There is potential for the decommissioning of other projects concurrently with the decommissioning of the proposed OWEF, which may result in cumulative impacts to recreation resources during decommissioning of the proposed OWEF. The sites of other projects that are being decommissioned during the same period would be returned to an undeveloped condition, similar to the Proposed Action. Impacts would be temporary due to nature of decommissioning activities and would be similar to those described under.

4.12.9.7 CEQA Significance Determinations

Construction

- **Rec-1.** During construction of the proposed OWEF or the alternatives, the physical deterioration of recreational resources would be less than significant given the limited addition of people to the area, the short-term duration of construction, and the numerous recreation opportunities in the project vicinity. Following implementation of BMPs and mitigation measures presented in Section 4.12.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Recreation would not be significant.

Operation and Maintenance

- **Rec-1.** During the operation period of the proposed OWEF, the project site would be available for recreational uses. In addition, operation of the project would require a permanent staff of up to 12 individuals. This minimal increase in potential long-term recreation users would not substantially contribute to the physical deterioration of neighborhood and regional recreational opportunities. Following implementation of BMPs and mitigation measures presented in Section 4.12.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Recreation would not be significant.

Decommissioning

- **Rec-1.** Disruption to the project site as a result of decommissioning activities associated with the proposed OWEF would be temporary, and the physical deterioration of recreational resources would be less than significant given the limited addition of people to the area, the short-term duration of decommissioning activities, and the numerous recreation opportunities in the project vicinity. Following implementation of BMPs and mitigation measures presented in Section 4.12.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Recreation would not be significant.

4.12.10 Mitigation Measures

Rec-1 Juan Bautista de Anza National Historic Trail (Anza Trail) Corridor. As recommended by the National Park Service (NPS), a Comprehensive Interpretive Plan for the Anza Trail will be prepared through Applicant cooperation and coordination with the BLM and the NPS. Potential components of this Plan as identified by the NPS could include, but not be limited to the following:

- New Interpretive Facilities
  - Installation of Yuha Well Wayside Exhibit
  - Additional Interpretation at the Anza Trail Overlook
  - Interpretive Exhibit at Plaster City Off-Highway Vehicle (OHV) Open Area
  - Supplement Exhibit at Sunbeam Rest Area on Interstate 8 (I-8)
- Anza Trail-Themed Exhibit at a Local Museum
- Anza Trail Interpretive Brochure
- Increase Accessibility of the BLM Yuha Desert Cultural History Anza Tour
- Re-evaluate and Complete the Anza Recreational Trail
- Historic Campsite Surveys (Archaeological Studies)
- Trail-Wide Mitigation Fund

Final determination of the measures may include any of the above measures, in conjunction with consultation with the NPS and the BLM.

4.12.11 Residual Impacts After Mitigation

There would be no adverse unavoidable impact to recreational resources as a result of construction, operation and maintenance, or decommissioning of the Proposed Action.

4.13 Social and Economic Issues

4.13.1 Methodology for Analysis

In the analysis, population, housing, employment, income, labor force, and tax revenue data from federal, State and local agencies were compared to labor force projections, construction cost estimates, and design specifications for the proposed OWEF. Social and economic effects may include those that are growth inducing or related to induced changes in the pattern of land use, population density, or growth rate. It should be noted that under CEQA social and economic effects in and of themselves are not considered significant effects on the environment.

4.13.2 CEQA Significance Criteria

Significance criteria related to socioeconomics impacts (including population and housing) listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines are presented below.

SOC-1 *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);*

SOC-2 *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere;*

SOC-3 *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere;*

The indicators above were also used as criteria for determining the significance of impacts under CEQA. For the OWEF, criteria SOC-2 and SOC-3 are not included in the proposed action, and are therefore not addressed further in the impact analysis presented in this section.

4.13.3 Alternative 1: Proposed Action

4.13.3.1 Direct and Indirect Impacts

This section presents the effects on population, income, employment, and housing as both a direct result of the proposed project and as a result of the expenditures, income, employment, and tax revenues generated by the proposed project. The discussion of socioeconomic impacts from the Proposed Action is separated into three categories: construction, operations and maintenance, and decommissioning.

Construction

Construction of the proposed OWEF would require a peak of approximately 356 workers and last 11 months. As described in Section 2, the majority of construction personnel would stay in hotels and rental properties in El Centro for the duration of construction. A transportation plan, including carpooling, would be included under the Proposed Action.

Changes to Local Employment or Labor Force

Construction employment for the Proposed Action would include skilled or semi-skilled positions including line workers, welders, heavy equipment operators, surveyors, engineers, utility equipment workers, truck drivers, warehouse workers, clerical workers, and laborers. As indicated in Table 3.14-3, Imperial and San Diego Counties contain a large construction workforce in proportion to the Proposed Action labor force requirements. Workers from either county or other nearby counties would potentially work on the OWEF.

The maximum required construction workforce of 246 personnel required for the Proposed Action would comprise 0.43 percent of the total combined construction workforce of Imperial and San Diego Counties (56,900 persons) (CAEDD, 2011a; CAEDD, 2011b). Although Ocotillo and its immediate surroundings have low populations, large local construction workforces are generally available in the region because of larger population centers in San Diego County and the El Centro area in Imperial County. Local highways provide good access to the site from throughout the region. It is approximately 115 miles (less than a 2-hour drive) between downtown San Diego and El Centro. Therefore, few, if any, workers are expected to relocate to the area permanently for construction. Please see Section 4.16, Transportation and Public Access, for a discussion of construction traffic.

Changes in Revenue

No business uses occur in the immediate vicinity of the proposed OWEF, and the project would not require the removal or relocation of any businesses. As described in Section 3.8 (Mineral Resources), while mineral claims have been made on the proposed site, no active mineral extraction is occurring. A variety of surface mines are located in the vicinity of the proposed OWEF, as shown in Table 3.8-1, but none would be displaced by the OWEF. Impacts on these and other local businesses would potentially result from degradation of views, views of construction equipment and activity, vehicular or pedestrian access restrictions, land use, air quality, and noise effects, or health and safety concerns (such as electromagnetic frequencies [EMF]). These issues are analyzed in this document in Sections 4.18 (Visual Resources), 4.6 (Lands and Realty), 4.9 (Noise), 4.16 (Transportation and Public Access), and 4.11 (Public Health and Safety). As short-term construction impacts for these issues would not be substantial or have been mitigated such that they would not be substantial, any associated loss of local business revenue impacts would be minimal. In addition, these short-term impacts would not displace existing businesses and would result in minimal revenue impacts. Therefore, no additional mitigation measures are recommended outside of those presented in Sections 4.18 (Visual Resources), 4.16 (Transportation and Public Access), 4.6 (Lands and Realty), and 4.11 (Public Health and Safety) to mitigate potential impacts that would result in a substantial change to local business revenues.

Employment of construction personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. Personnel for construction would be drawn from local populations in Imperial and San Diego Counties, creating new temporary employment in these counties. A limited number of construction personnel would require temporary housing, likely in local hotels, and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy.

Operation and Maintenance

Operation and maintenance of the proposed OWEF would require a workforce of approximately 17 staff year-round, and approximately 10 temporary or contract workers for 12 weeks per year. As described in Chapter 2, Proposed Action and Alternatives, operation and maintenance personnel would commute from El Centro.

Changes to Local Employment or Labor Force

As described above for construction impacts, the maximum required operations and maintenance workforce of 27 personnel required for the Proposed Action would comprise 0.01 percent of the total combined utilities workforce of Imperial and San Diego Counties (211,000 persons) (CAEDD, 2011a; CAEDD, 2011b). With less than a two-hour drive between downtown San Diego and El Centro, it is anticipated that a few workers would relocate to the area permanently. Please see Section 4.16, Transportation and Public Access, for a discussion of construction traffic.

Changes in Revenue

Employment of operation and maintenance personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. Personnel would be drawn from local populations in Imperial and San Diego Counties, creating new employment in these counties. A limited number of personnel would require housing and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy in terms of increased revenues.

Changes in Property Values

During the public scoping process for the proposed OWEF, the public expressed interest and concern regarding the potential impacts of the project on property values. Other agencies, such as the California Public Utilities Commission (CPUC) and California Energy Commission (CEC) have noted a high level of public concern associated with the siting of power plant projects, transmission lines, and other locally undesirable land uses (LULUs) and potential effects on property values. Claims of diminished property value through decreased marketability are based on reported concerns about hazards to human health and safety, and increased noise, traffic, and visual impacts associated with living in proximity to unwanted land uses such as power plants, freeways, high-voltage transmission lines, landfills, and hazardous waste sites.

A 2009 Ernest Orlando Lawrence Berkeley National Laboratory study, *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis*, by Hoen, et al., collected data on approximately 7,500 sales of single-family homes situated within 10 miles of 24 existing wind facilities in 9 different U.S. states. Each of the homes in the analysis was visited by the researchers to determine the degree to which the wind facility was visible at the time of the home sale and to collect other pertinent data. The study authors applied a variety of models, conducted a sales analysis, and evaluated the possible impacts on sales volumes. While the analysis cannot dismiss the possibility that individual homes have been or could be negatively affected by proximity to wind facilities, the impacts were either too small or too infrequent to result in any widespread and consistent statistically observable effect. Based on the evidence in the 2009 Hoen, et al. report, no evidence is found that home prices in the vicinity of wind facilities are consistently, measurably, and substantially affected by the view of the wind facilities or the distance of the home to the facilities.

Similarly, numerous studies of other LULUs, such as energy generation and transmission line projects, conclude that the potential for environmental concerns associated with projects to have an effect on property value is usually smaller than anticipated and essentially impossible to quantify due to the individuality of properties and their respective neighborhoods, as well as differences in the personal preferences of individual buyers and the weight of other factors that contribute to a person's decision to purchase a property. Studies indicate that other property-specific factors such as neighborhood features, square footage, size of lot, and irrigation potential are substantially more likely than the presence of energy infrastructure to be major determinants of the sales price of property (McCann, 1999). Across the board, studies have generally concluded that over time, potential adverse effects to property value tend to diminish to a point of being negligible within five years; the studies determine that this decreasing effect is most likely due to increased screening of facilities over time, as vegetation increases in size, as well as diminished public sensitivity to the facility proximity, particularly resulting from the absence of adverse publicity.

As demonstrated by the studies discussed above, factors that have the potential to affect property value are numerous and varied; as a result, it is not possible to identify exactly how the proposed OWEF would potentially affect private property values. However, because the conclusions of the Kinnard-Dickey (1995) paper, the Crocket (1992) analysis, and the Hoen, et al. (2009) paper are applicable to this analysis, it is possible to say that property-specific factors such as neighborhood features, square footage, size of lot, and water availability are more likely to be major determinants in affecting property values than the presence of a wind generating facility such as the OWEF. It is not unreasonable to assume that some aspect of project construction and/or operation and maintenance could potentially affect private property values. However, as discussed above, the effects of industrial facilities on property value are generally smaller in comparison to other relevant factors and generally diminish within five years to be negligible.

Decommissioning

According to Section 2.6.11, Decommissioning and Repowering, the proposed OWEF is expected to have a lifespan of 30 years. At any point during this time, temporary or permanent closure of the facility could occur. Temporary closure would be a result of necessary maintenance, hazardous weather conditions, or damage due to a natural disaster. Permanent closure would be a result of damage that is beyond repair, adverse economic conditions, or other significant reasons.

Both temporary and permanent closures would require the Applicant to submit to the BLM a contingency plan or a decommissioning plan, respectively. A contingency plan would be implemented to ensure compliance with applicable plans, regulations, and standards, and appropriate shutdown procedures depending on the length of the cessation. A decommissioning plan would be implemented to ensure compliance with applicable plans, regulations, and standards, removal of equipment and shutdown procedures, site restoration, potential decommissioning alternatives, and the costs and source of funds associated with decommissioning activities. As described in Section 2.6.11, it is assumed decommissioning of the facility would be similar to that described above for construction of the OWEF.

The long-term economic and fiscal effects that closure and decommissioning activities would have on the study area would be speculative, because future conditions are unknown. Upon permanent closure of the OWEF, the beneficial socioeconomic operational impacts such as worker payroll, project expenditures, and local economic stimulus would no longer occur.

No business uses or mineral extraction occur in the immediate vicinity of Alternative 1 and decommissioning of the project would not require the removal or relocation of any business uses. Impacts on local businesses and mines would potentially result from degradation of views, views of construction equipment and activity, vehicular or pedestrian access restrictions, land use, air quality, and noise effects, or health and safety concerns (such as EMF). These issues are analyzed in this document in Sections 4.18 (Visual Resources), 4.6 (Lands and Realty), 4.9 (Noise), 4.16 (Transportation and Public Access), and 4.11 (Public Health and Safety). Short-term construction impacts for these issues would not be substantial or have been mitigated such that they would not be substantial, any associated loss of local business revenue impacts would be minimal. In addition, these short-term impacts would result in minimal revenue impacts. Therefore, no additional mitigation measures are recommended outside of those presented in Sections 4.18 (Visual Resources), 4.16 (Transportation and Public Access), 4.6 (Lands and Realty), and 4.11 (Public Health and Safety) to mitigate potential impacts that would result in a substantial change to local business revenues.

Employment of decommissioning personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. Personnel for decommissioning would be drawn from local populations in Imperial and San Diego Counties, creating new temporary employment in these counties. A limited number of decommissioning personnel would require temporary housing, likely in local hotels, and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy in increased revenues.

4.13.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.13.2. Only those significance criteria which were determined in Section 4.13.2 to be relevant to the project are addressed below.

Construction

- **SOC-1.** Construction labor would be drawn from San Diego and Imperial Counties and would require approximately 0.43 percent of the combined construction labor force. As this would represent a minute amount of the labor force, the regional labor force would have a sufficient supply of labor for the project. Few workers from outside the region would be necessary for the project. Consequently, construction of the OWEF would not substantially increase the population. Any impacts would be less than significant.

Operation and Maintenance

- **SOC-1.** Operational labor would be drawn from San Diego and Imperial Counties and would require approximately 0.01 percent of the combined utilities labor force. As this would represent a minute amount of the labor force, the regional labor force would have a sufficient supply of labor for the project. Few workers from outside the region would be necessary for the project. Consequently, operation of the OWEF would not substantially increase the population. Any impacts would be less than significant.

Decommissioning

- **SOC-1.** Decommissioning labor would be drawn from San Diego and Imperial Counties and is anticipated to require a minute proportion of the combined construction labor force. Any impacts on labor and employment would be less than significant and would potentially be a beneficial impact to the region.

4.13.4 Alternative 2: 137 Wind Turbine Generators

4.13.4.1 Direct and Indirect Impacts

This section presents the effects on population, income, employment, housing, public facilities and services as both a direct result of the project alternatives and as a result of the expenditures, income, employment, and tax revenues generated by the project alternatives. The discussion of socioeconomic impacts from Alternative 2: 137 Wind Turbines is separated into three categories: construction, operations and maintenance, and decommissioning.

Construction

Construction of Alternative 2 would utilize the same equipment and materials as the Proposed Action (Alternative 1); however, fewer workers would be required due to the reduction in the number of WTGs. Construction of this alternative would be completed in a single phase lasting 11 months. As described in Section 2, Proposed Action and Alternatives, it is anticipated that the majority of construction personnel would stay in hotels and rental properties in El Centro. A transportation plan, including carpooling, would be included under Alternative 2. Please see Section 4.16, Transportation and Public Access, for a discussion of construction traffic and the transportation plan.

Changes to Local Employment or Labor Force

Construction employment for Alternative 2 would include the same skilled or semi-skilled positions as described above for the Proposed Action. As indicated in Table 3.14-3, Imperial and San Diego Counties contain a large construction workforce in proportion to Alternative 2 labor force requirements. Workers from either county or other nearby counties would potentially work on Alternative 2.

As Alternative 2 would require fewer workers than the Proposed Action, the maximum required construction workforce would be less than 246 personnel and would comprise less than 0.43 percent of the total combined construction workforce of Imperial and San Diego Counties (56,900 persons). With larger population centers in San Diego County and the El Centro area in Imperial County and good access to the site from throughout the region, few, if any, workers are expected to relocate to the area permanently for construction. The project would not adversely impact the local labor force.

Changes in Revenue

Any changes in revenue associated with Alternative 2 would be similar to that described above for Alternative 1, although with a smaller workforce and fewer WTGs, any adverse impacts would be less severe and any benefits would also be reduced.

Operation and Maintenance

Operation and maintenance of Alternative 2 would require the same workforce as Alternative 1 - approximately 17 staff year-round and 10 temporary or contract workers for 12 weeks per year.

Changes to Local Employment or Labor Force

As the maximum required operations and maintenance workforce of 27 personnel would comprise 0.01 percent of the total combined utilities workforce of Imperial and San Diego Counties (211,000 persons), it is anticipated that few, if any, workers would relocate to the area permanently. The project would not adversely impact the local labor force.

Changes in Revenue

Employment of operation and maintenance personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services and new employment would be created in the region. A limited number of personnel would require housing and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy.

Changes in Property Values

Under Alternative 2, the northern-most WTGs, would not be constructed. As these WTGs would be the farthest away from populated areas, Alternative 2 would be functionally the same as Alternative 1 with regard to property value impacts.

Decommissioning

The long-term economic and fiscal effects that closure and decommissioning activities would have on the study area would be speculative, because future conditions are unknown. Upon permanent closure of Alternative 2, the beneficial socioeconomic operational impacts such as worker payroll, project expenditures, and local economic stimulus would no longer occur. Decommissioning of Alternative 2 would have some beneficial fiscal and non-fiscal impacts to the area as decommissioning workers would require temporary housing in the area and would purchase food, beverages, and other commodities, contributing to the local economy.

4.13.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.13.2. Only those significance criteria which were determined in Section 4.13.2 to be relevant to the project are addressed below.

Construction

- **SOC-1.** Construction labor would be drawn from San Diego and Imperial Counties and would require less than 0.43 percent of the combined construction labor force. Few workers from outside the region would be necessary for the project. Consequently, construction of Alternative 2 would not substantially increase the population. Any impacts would be less than significant.

Operation and Maintenance

- **SOC-1.** Operational labor would be drawn from San Diego and Imperial Counties and would require approximately 0.01 percent of the combined utilities labor force. Few workers from outside the region would be necessary for the project and would not substantially increase the population. Any impacts would be less than significant.

Decommissioning

- **SOC-1.** Decommissioning labor would be drawn from San Diego and Imperial Counties and is anticipated to require a minute proportion of the combined construction labor force. Any impacts on labor and employment would not be less than significant and would potentially be a beneficial impact to the region.

4.13.5 Alternative 3: 105 Wind Turbine Generators

4.13.5.1 Direct and Indirect Impacts

This section presents the effects on population, income, employment, housing, public facilities and services as both a direct result of the project alternatives and as a result of the expenditures, income, employment, and tax revenues generated by the project alternatives. The discussion of socioeconomic impacts from Alternative 3: 105 Wind Turbines is separated into three categories: construction, operations and maintenance, and decommissioning.

Construction

Construction of Alternative 3 would utilize the same equipment and materials as Alternative 1; however, fewer workers would be required due to the reduction in the number of WTGs. Construction of this alternative would be completed in a single phase lasting 11 months. As described in Section 2, Proposed Action and Alternatives, it is anticipated that the majority of construction personnel would stay in hotels and rental properties in El Centro. A transportation plan, including carpooling, would be included under Alternative 3.

Changes to Local Employment or Labor Force

Alternative 3 impacts on employment or labor force would be the same as described for Alternative 2.

Changes in Revenue

Any changes in revenue associated with Alternative 3 would be the same as for Alternative 2.

Operation and Maintenance

Operation and maintenance of Alternative 3 would require a similar workforce to Alternative 1: approximately 17 staff year-round and 10 temporary or contract workers for 12 weeks per year.

Changes to Local Employment or Labor Force

As the maximum required operations and maintenance workforce of 27 personnel would comprise 0.01 percent of the total combined utilities workforce of Imperial and San Diego Counties (211,000 persons), it is anticipated that few, if any, workers would relocate to the area permanently. The project would not adversely impact the local labor force.

Changes in Revenue

Employment of operation and maintenance personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services and new employment would be created in the region. A limited number of personnel would require housing and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy.

Changes in Property Values

Under Alternative 3, the eastern-most WTGs, would not be constructed. As these WTGs would be the some of the closest to residences, Alternative 3 would have less of an impact than the Proposed Action with regard to property value impacts. It is not unreasonable to assume that some aspect of project construction and/or operation and maintenance would still potentially affect private property values. However, as discussed above, the effects of industrial facilities on property value are generally smaller in comparison to other relevant factors and generally diminish within five years to be negligible.

Decommissioning

The long-term economic and fiscal effects that closure and decommissioning activities would have on the study area would be speculative, because future conditions are unknown. Upon permanent closure of Alternative 3, the beneficial socioeconomic operational impacts such as worker payroll, project expenditures, and local economic stimulus would no longer occur. Decommissioning of Alternative 3 would have some beneficial fiscal and non-fiscal impacts to the area as decommissioning workers would require temporary housing in the area and would purchase food, beverages, and other commodities, contributing to the local economy.

4.13.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.13.2. Only those significance criteria which were determined in Section 4.13.2 to be relevant to the project are addressed below.

Construction

- **SOC-1.** Construction labor would be drawn from San Diego and Imperial Counties and would require less than 0.43 percent of the combined construction labor force. Few workers from outside the region would be necessary for the project. Consequently, construction of Alternative 3 would not substantially increase the population. Any impacts would be less than significant.

Operation and Maintenance

- **SOC-1.** Operational labor would be drawn from San Diego and Imperial Counties and would require approximately 0.01 percent of the combined utilities labor force. Few workers from outside the region would be necessary for the project and would not substantially increase the population. Any impacts would be less than significant.

Decommissioning

- **SOC-1.** Decommissioning labor would be drawn from San Diego and Imperial Counties and is anticipated to require a minute proportion of the combined construction labor force. Any impacts on labor and employment would be less than significant and would potentially be a beneficial impact to the region.

4.13.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.13.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur and existing conditions relevant to socioeconomics would continue. No impact would occur.

4.13.6.2 CEQA Significance Determinations

Alternative 4 would not result in impacts to socioeconomics.

4.13.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.13.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to socioeconomics would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur.

4.13.7.2 CEQA Significance Determinations

Alternative 5 would not result in impacts to socioeconomics.

4.13.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.13.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, similar impacts to socioeconomics as those described for the Alternative 1 could occur.

4.13.8.2 CEQA Significance Determinations

As a future wind development project would likely be implemented under Alternative 6, the socioeconomics significance determinations for Alternative 6 would be the same as described for Alternative 1.

4.13.9 Cumulative Impacts

Cumulative socioeconomic impacts resulting from the Proposed Action would occur if similar impacts of other projects located within the geographic extent of this analysis were to occur during the same time period as those impacts of the proposed OWEF, including during the construction, operation and maintenance, and decommissioning phases.

4.13.9.1 Geographic Extent/Context

As described above and in Section 3.14, the socioeconomic effects of the project would occur in San Diego and Imperial Counties, particularly unincorporated portions of eastern San Diego County, unincorporated western Imperial County, the unincorporated community of Ocotillo and the City of El Centro. Additionally, as any socioeconomic impacts generated by the proposed OWEF would be limited to occurring within the lifespan of the project, cumulative socioeconomic impacts would also occur only during the lifespan of the project.

4.13.9.2 Existing Cumulative Conditions

Past development and population growth within the project area have affected the population size and composition, settlement patterns, housing demand, business revenues and conflicts, as well as property values throughout the local area and region. Population increases have both an indirect and direct influence on development - e.g., housing demand increases and the workforce expands. In addition, continued development creates more infrastructure affecting business operations, revenues, and property values. Section 3.14 (Social and Economic Setting) describes existing socioeconomic conditions within the project area, including demographics, housing characteristics, and labor characteristics, which have developed as a result of the past and present projects that comprise existing cumulative conditions.

These past and existing projects would contribute to the cumulative impact of the proposed OWEF and alternatives. These types of past and existing projects, together with reasonably foreseeable projects described below, could combine with impacts of the proposed OWEF or an alternative to affect socioeconomics within the geographic extent of this cumulative analysis.

4.13.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider to be reasonably foreseeable. The cumulative projects relevant to the geographic extent of this cumulative analysis of socioeconomic impacts associated with the proposed OWEF are described above, in Section 4.13.9.2 (Existing Cumulative Conditions). Most of the projects presented in Table 4.1-1 and described above have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not yet been completed for projects determined to be located within the geographic extent of this cumulative analysis, the potential effects of all projects comprising the existing and reasonably foreseeable cumulative conditions relevant to the proposed OWEF were considered in the cumulative impacts analyses in this EIS/EIR. Of the cumulative projects listed in Table 4.1-1, the following list provides a summary of projects which characterize the reasonably foreseeable projects affecting socioeconomic conditions based on needs for large labor force and increases in local population:

- **Sunrise Powerlink.** This is a 150-mile transmission line routes from SDG&E's Imperial Valley Substation near El Centro to SDG&E's Peñasquitos Substation near Interstate 805, in coastal San Diego. Construction would require a large labor force for construction in San Diego and Imperial Counties. Stringing activities associated with Sunrise Powerlink may overlap the timeframe for construction of the proposed OWEF. Construction of the Sunrise Powerlink would require approximately 800 workers and operation would require approximately 20 workers. Construction of the Sunrise Powerlink transmission towers would have similar impacts on businesses and property values as the proposed OWEF, although Sunrise Powerlink would affect revenues from agricultural lands crossed by the transmission line.
- **Imperial Valley Solar – Solar Two, CACA 047740.** This solar energy project encompasses 6,140 acres in southwestern Imperial County, and would require a large labor force for construction. Solar Two would require a peak construction workforce of 731 workers and average 360 workers per month during construction. Operation of Solar Two would require approximately 164 workers. Construction is anticipated to overlap with the construction of the proposed OWEF. According to the Solar Two EIR, the project would not displace housing or people, induce population growth, or result in environmental justice impacts.
- **Desert Springs Oasis.** This project is a master-planned luxury resort community with vacation homes and recreational facilities, located in southwestern Imperial County, north of El Centro. As a residential community, this would have potential to increase local populations.
- **Coyote Wells.** The Wind Zero Group, Inc. has proposed to construct this residential development, per a Specific Plan which describes 22 parcels and 10 land use designations. Construction of Phase I of Coyote Wells would overlap with construction of the proposed OWEF. Implementation of the Specific Plan would require approximately 200 workers during and after construction. Phase III of the Coyote Wells Specific Plan would include 32 townhomes and 28 garage lofts which would be utilized by visitors, but would not have permanent residents. Phase III also includes three single-family residences resulting in approximately nine new residents.
- **Alder 70. Scaroni Properties, Inc.** has proposed this 75-acre residential development located within the urban planning area of El Centro. As a residential community, this would have potential to increase local populations.

- **Renewergy.** Renewegy LLC is planning to conduct wind testing with meteorological towers immediately east of the OWEF site. While Renewergy could result in similar impacts as the proposed OWEF, it is similarly unlikely to substantially affect property values or business revenues and would have little impact on employment, population, or housing.

Some possible cumulative effects include but are not limited to: increased temporary employment during construction, increased permanent employment during operation and maintenance, alter business revenues, or alteration of property values.

While San Diego and Imperial Counties continue to increase in population, requiring additional housing, public services, and utilities, eastern San Diego County and western Imperial County are both characterized by plans for rapid expansion of renewable energy projects and the accompanying infrastructure necessary to execute these projects.

4.13.9.4 Construction

Construction of the proposed OWEF would utilize the same workforce as many of the projects listed in Table 4.1-1. Impacts associated with construction activities would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The potential for socioeconomic impacts of the proposed OWEF construction to combine with the effects of other projects within the geographic scope of this cumulative analysis is described below.

Changes to Local Employment or Labor Force

While the proposed OWEF would draw on the same labor force as many of the other projects listed in Table 4.1-1, specifically the Sunrise Powerlink, Imperial Valley Solar, and Renewergy projects, and construction would likely occur at the same time as some of the other projects. The combined construction demands of Sunrise Powerlink, Imperial Valley Solar, and Coyote Wells, and the proposed OWEF would require a maximum of approximately 2,000 workers if the peak construction periods for each project coincided. Due to the large construction labor force in San Diego and Imperial Counties (56,900 persons), it is anticipated that the regional labor force would be sufficient to accommodate the planned projects, which would represent approximately 4 percent of the San Diego and Imperial County construction labor force.

The solar projects in eastern Riverside County along the I-10 corridor, including the Blythe Solar Power Project, Palen Solar Power Project, Genesis Solar Energy Project, Rice Solar Energy Project, and Desert Sunlight PV Project, could result in a worst-case scenario in an influx of construction workers seeking temporary lodging. This, however, would occur in Riverside County and draw on workers in the Riverside/San Bernardino/Ontario Metropolitan Statistical Unit (BLM, 2010). Similarly, a large number of projects in Imperial and eastern San Diego Counties would have the potential to occur at the same time and affect the local labor force, including the Sunrise Powerlink, Imperial Valley Solar, Desert Springs Oasis, Coyote Wells and Alder 70 Scaroni Properties projects listed above. Given numerous factors that would affect an influx of construction workers, including timing of project peak employment, construction schedules, and utilization of unemployed workers, it is difficult to project the extent of future weekly commuting or other in-migration that would be necessary to meet the future cumulative labor needs within the region. As discussed earlier, the skilled construction labor force within Imperial and San Diego Counties is estimated to be approximately 56,900. This suggests that there is likely to be a considerable additional potential labor force available that could be willing to commute weekly or temporarily relocate to the local area. Consequently, from a broader geographic and labor force perspective, no substantial shortages of adequately skilled construction workers are anticipated.

The cumulative influx in construction labor to the area could create demand for temporary housing that is greater than the existing supply of temporary lodging. There are expected to be some suitable and available temporary lodging at local hotel/motel lodging and private and public RV/campgrounds are also available for local accommodations. If construction workers are willing to commute 1 to 1.5 hours daily to the site, the supply of potential hotel/motel increases dramatically. This would be more than sufficient temporary housing for construction workers seeking temporary housing under a worst-case scenario.

In summary, there is potential for short-term adverse cumulative social and economic impacts in the area associated with the demand for skilled construction labor for the solar, wind, and geothermal projects proposed for future development within Imperial County. While there may be increased demand for temporary local housing from construction workers seeking to commute weekly to the local area, given the estimated availability of lodging, it is expected that there will adequate and suitable housing to meet any future construction worker temporary housing demand. Therefore, no major adverse cumulative impacts would be expected to result related to employment, labor, and housing.

Changes in Revenue

While the Sunrise Powerlink would result in impacts to agricultural revenues, because the proposed OWEF would not occur in the vicinity of any agriculture, business uses, or mineral extraction and would not require the removal or relocation of any business uses, the proposed OWEF would not contribute to any cumulative adverse impacts to business revenues. The new temporary employment and purchase of local materials, food, beverages, and other commodities, would contribute with other projects toward cumulative economic benefits to the local economy.

4.13.9.5 Operation and Maintenance

Operation and Maintenance

Operation and maintenance of the proposed OWEF would require a similar workforce to many of the other projects listed in Table 4.1-1.

Changes to Local Employment or Labor Force

As the maximum required OWEF operations and maintenance workforce of 27 employees, combined with the Sunrise Powerlink's 20 operational employees and Imperial Valley Solar's 164 operational employees, would comprise 0.1 percent of the total combined utilities workforce of Imperial and San Diego Counties (211,000 persons), it is anticipated that the regional labor force would be sufficient to accommodate the planned projects. As few workers are expected to relocate to the area permanently for operation because they would be commuting either from El Centro or the San Diego area, the proposed OWEF's contribution to any cumulative impacts on local employment or labor force would not be considerable.

Changes in Revenue

As with construction, employment of operation and maintenance personnel, both for the proposed OWEF and other planned projects, would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services and new employment would be created in the region. The new employment and purchase of local materials, food, beverages, and other commodities, would contribute with other projects toward cumulative economic benefits to the local economy.

Changes in Property Values

While the Sunrise Powerlink, Imperial Valley Solar, and Renewergy projects would result in similar types of impacts on property values, only the Sunrise Powerlink and Renewergy projects would be in close enough proximity to the proposed OWEF to affect the same properties. Due to the proposed OWEF's remote location and distance from most other projects listed in Table 4.1-1, the proposed OWEF would not combine with the majority of them to affect property values. The proposed OWEF could potentially combine with the Sunrise Powerlink and Renewergy projects to affect property values, but as described above for the Proposed Action, the effects of industrial facilities on property value are generally smaller in comparison to other relevant factors and generally diminish within five years to be negligible. As such, the proposed OWEF's contribution to any cumulative property value impacts with the Sunrise Powerlink and Renewergy projects would be minimal.

4.13.9.6 Decommissioning

Upon permanent closure of the proposed OWEF, the beneficial socioeconomic contributions to the cumulative economic conditions of the region would no longer occur. It is assumed that many of the same impacts that occurred during construction activities would occur during decommissioning and the proposed OWEF's decommissioning contribution to these cumulative impacts would be the same as described above for construction.

4.13.9.7 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.13.2. Only those significance criteria which were determined in Section 4.13.2 to be relevant to the project are addressed below.

Construction

- **SOC-1.** Construction labor would be drawn from San Diego and Imperial Counties and few workers from outside the region would be necessary for the project. Consequently, the proposed OWEF's contribution to any cumulative impacts on local employment or labor force would not be considerable. Any impacts would be less than significant.

Operation and Maintenance

- **SOC-1.** Operational labor would be drawn from San Diego and Imperial Counties and few workers from outside the region would be necessary for the project. Consequently, the proposed OWEF's contribution to any cumulative impacts on local employment or labor force would not be considerable. Any impacts would be less than significant.

Decommissioning

- **SOC-1.** Decommissioning labor would be drawn from San Diego and Imperial Counties and is anticipated to require a minute proportion of the combined construction labor force. Any contribution to cumulative impacts on labor and employment would not be considerable and would be less than significant.

4.13.10 Mitigation Measures

No mitigation is necessary.

4.13.11 Residual Impacts After Mitigation

All adverse impacts on socioeconomics resulting from construction, operation and maintenance, or decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced.

4.14 Soil Resources

4.14.1 Methodology for Analysis

This section describes effects on geology and soils that would be caused by implementation of the proposed OWEF, or "Proposed Action," and alternatives. The following discussion addresses potential environmental impacts associated with implementation of the Proposed Action and recommends measures to reduce or avoid adverse impacts anticipated from construction, operation, and decommissioning of the proposed OWEF and alternatives. A discussion of cumulative impacts related to geology and soil resources is also included in this section.

This analysis first established baseline conditions for the environmental setting relevant to geology and soil resources, presented in Section 3.15 of this EIS/EIR. These baseline conditions were evaluated based on their potential to be affected by construction activities, operation and maintenance activities, and decommissioning of the Proposed Action and/or an alternative to the Proposed Action. Construction, operation, and maintenance activities were identified based on analysis provided in the Applicant's Plan of Development (OE, 2010), as discussed in Chapter 2 of this EIS/EIR. Impacts to geology and soil resources were identified based on the predicted interaction between construction, operation, and decommissioning with the environmental setting.

4.14.2 CEQA Significance Criteria

The indicators listed below were used to describe the impacts to soil resources of the OWEF pursuant to CEQA. These indicators are the same as the significance criteria for geology and soils listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines.

SR-1 *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides;*

SR-2 *Result in substantial soil erosion or the loss of topsoil;*

SR-3 *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;*

SR-4 *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;*

SR-5 *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.*

Regarding potential effects associated with landslide activity, the Imperial County General Plan landslide activity map indicates moderate potential for landslide activity within, to the south, and up to about two miles to the west and southwest of the community of Ocotillo; low potential for landslide activity beyond two miles west andsouthwest of the community of Ocotillo; and no potential for landslide activity to the north and east of the community of Ocotillo (Imperial County, 2006; see Figure 8, Landslide Activity). As such, portions of the proposed OWEF site are located in the vicinity of areas mapped as having some potential for landslide activity. However, the Preliminary Geotechnical Investigation indicates that the proposed OWEF site is not located close enough to any of the surrounding mountains to be affected by either a debris flow or a landslide (NAA, 2010). Therefore, this topic is not discussed further in this analysis.

The following CEQA Guidelines criterion related to seismic hazards is addressed in Section 4.11 (Public Health and Safety) of this EIS/EIR.

PHS-3 *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;

ii. Strong seismic ground shaking; or

iii. Seismic-related ground failure, including liquefaction.

4.14.3 Alternative 1: Proposed Action

4.14.3.1 Direct and Indirect Impacts

As described in Section 2.2 (Geotechnical Studies that May be Planned) of the Plan of Development for the proposed OWEF (OE, 2010), a preliminary geotechnical analysis of the project has been conducted to describe soil and geology suitability, and additional site-specific geotechnical studies may be required for use in the final design of the turbine foundations.

Construction

Construction activities that would affect soil resources include excavation, grading, and soil compaction to prepare the site for installation of project components. Facilities for the proposed OWEF would consist of wind turbine generators (WTGs), an electrical collection system for collecting the power generated by each WTG, an electrical substation, access roads, and an operation and maintenance (O&M) building (with an associated septic system).The impacts on soil resources associated with construction of the Proposed Action are described below.

Soil Erosion and Loss of Topsoil

Please see Water Resources, Section 4.19.3.1, for additional discussion of construction-related erosion impacts. Soil-disturbing activities that would occur during construction of the proposed OWEF, including excavation and grading, would have the potential to result in erosion (transport) and sedimentation (delivery). This impact would be most likely to occur if a storm event occurs during construction activities, while disturbed soils are exposed and/or have not yet been re-vegetated. In addition, particularly within and adjacent to designated Flood Hazard Areas, surface water runoff could occur as sheet flow, which could increase the potential for erosion of unmanaged disturbed and/or stockpiled soil.

Erosion control features and BMPs included in the proposed OWEF's federally-required SWPPP would minimize or prevent disturbed and/or exposed materials from mobilizing in such a way that soil erosion or loss of topsoil could occur.

The Proposed Action's potential to alter the existing drainage pattern(s) of the site would be minimized through compliance with design specifications and BMPs identified by the BLM, listed in Water Resources, Section 4.19.10. Erosion and loss of topsoil would also be minimized through implementation of soil-related BMPs identified by the BLM, listed below in Section 4.14.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential erosion and loss of topsoil: Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*) (see Section 4.14.10 for the full text of mitigation measures). Mitigation Measure Water-8 would ensure that project structures are designed, engineered, constructed, and maintained to avoid potential damage associated with flooding and/or erosion, and also ensure that the SWPPP would be developed and implemented for the Proposed Action. The SWPPP would include specific BMPs to maintain existing surface drainage patterns, thus minimizing potential adverse impacts associated with flooding. Mitigation Measure Water-9 ensures that the SWPPP to be developed and implemented for the Proposed Action includes specific BMPs to protect water quality and avoid adverse effects of project construction on surface water quality, including jurisdictional waters.

Soil erosion and sedimentation may occur as a result of construction of the proposed OWEF or an alternative; such effects would be site-specific. However, erosion-minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions installed before clearing and grading begins and mulching, seeding, or other suitable stabilization measures installed after construction begins would protect exposed areas during construction activities. Impacts due to soil erosion and loss of topsoil would be avoided or substantially reduced and adverse impacts would not result due to the Proposed Action.

Unstable Geologic Units

As discussed above, the preliminary geotechnical analysis indicates that the proposed OWEF site is not located close enough to any of the surrounding hillside mountains to be affected by either a debris flow or a landslide (NAA, 2010).

Lateral spreading of the ground surface can occur within liquefiable beds during seismic events. Factors such as distance from the earthquake epicenter, the magnitude of the seismic event, and the thickness and depth of liquefiable layers affect the amount of lateral spreading that may occur. As described below, the proposed OWEF site is considered to have low potential for liquefaction; therefore the potential for lateral spreading to occur is also considered low.

Subsidence is a settlement or lowering of the ground surface elevation due to factors such as tectonic movement, seismic compaction, hydrocompaction, consolidation induced by groundwater withdrawal, and consolidation under applied loads. Regional ground subsidence is typically caused by petroleum or groundwater withdrawal that increases the effective unit weight of the soil profile, increasing stress on deeper soils and resulting in consolidation or settlement of underlying soils (BLM, 2010). Regional subsidence of the Salton Trough is occurring due to ongoing tectonism and possibly basin loading (BLM, 2010). However, minor settling spread over the Salton Trough is considered unlikely to result in localized subsidence in the proposed OWEF area. The preliminary geotechnical analysis found that properly designed foundations would address impacts associated with subsidence or differential settlement.

Implementation of Mitigation Measure Soil-1(*Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design*), presented below in Section 4.14.10, would address impacts related to subsidence. Mitigation Measure Soil-1 requires that design-level geotechnical studies to be performed by the Applicant shall include detailed characterization of sub-surface conditions, including identification of any potentially determinental chemicals or soil features, as well as proposed solutions regarding how any identified subsurface hazards should be addressed or avoided.

Liquefaction is a loss of strength in soil when a stress, such as that caused by an earthquake, is applied to susceptible soils, such as loose saturated sands and silts. These susceptible soils were not encountered during the preliminary geotechnical analysis. If liquefaction were to occur, project infrastructure could be destabilized, resulting in stability hazards to infrastructure in the immediate vicinity. However, the proposed OWEF site is considered to have low potential for liquefaction. There is no evidence in the area that liquefaction induced by seismic ground motions has occurred. The lack of groundwater in the upper 50 feet along with the age and density/stiffness of the geologic formation indicate that the site is not prone to liquefaction surface distress. (NAA, 2010)

The preliminary geotechnical analysis found that the underlying subsurface soils encountered in test borings were medium dense to very dense, and should provide adequate bearing support for the proposed wind turbines and associated infrastructure. (NAA, 2010)

Potential adverse impacts associated with lateral spreading, subsidence, liquefaction, collapse, and/or otherwise potentially unstable geologic units may include destabilization of project infrastructure, resulting in stability hazards to infrastructure in the immediate vicinity. Such effects would be site-specific in nature and unlikely, due to final engineering and design efforts to site all project infrastructure on stable soils or bare rock. Any potential effects associated with unstable geologic units would be addressed through implementation of Mitigation Measure Soil-1(*Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design*), presented below in Section 4.14.10. Mitigation Measure Soil-1 requires that design-level geotechnical studies to be performed by the Applicant shall include detailed characterization of sub-surface conditions, including identification of any potentially determinental chemicals or soil features, as well as proposed solutions regarding how any identified subsurface hazards should be addressed or avoided. In the event potentially expansive or collapsible soils are encountered, appropriate design features, including excavation of potentially expansive or collapsible soils during construction and replacement with engineered backfill, ground-treatment processes, and redirection of surface water and drainage away from expansive foundation soils, would avoid impacts related to soil expansion or collapse.

Expansive Soils

Section 3.15.1 (see "Geologic Hazards") describes that subsurface conditions relevant to the proposed OWEF site and vicinity are not considered to be expansive. If permanent project infrastructure were sited on expansive soils, the soil characteristics could result in destabilization of the infrastructure, and possibly in subsequent hazards to the stability of infrastructure in the immediate vicinity. Geotechnical investigations would be required to ensure that construction of the proposed OWEF would not locate infrastructure on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), and would not create associated substantial risks to life or property. Implementation of Mitigation Measure Soil-1(*Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design*), presented below in Section 4.14.10, would address impacts related to expansive soils. Mitigation Measure Soil-1 requires that design-level geotechnical studies to be performed by the Applicant shall include detailed characterization of sub-surface conditions, including identification of any potentially determinental chemicals or soil features, as well as proposed solutions regarding how any identified subsurface hazards should be addressed or avoided.

Septic Tank and Leach Field

Section 1.3.12 (Waste and hazardous materials management) of the Plan of Development for the proposed OWEF describes that percolation tests have been conducted, and that based on the lowest allowed percolation rate of 60 minutes per inch, the maximum size of the absorption field would be 80 feet by 20 feet. The system would be designed by a licensed designer/installer. Construction of the proposed OWEF would not place a septic tank or leach field on soils incapable of adequately supporting the septic system, and does not include any other alternative waste water disposal systems.

Operation and Maintenance

Operation and maintenance activities that would affect soil resources include grading and gravel application to maintain access roads throughout the site. Grading activities could lead to erosion and loss of topsoil. However, the generally flat topography of the project site and the low average annual precipitation for the area would reduce the likelihood of erosion and loss of topsoil related to routine access road maintenance. Re-grading and re-graveling of access roads for routine maintenance would not alter the drainage patterns on-site, and would not lead to a substantial increase in erosion or loss of topsoil. It is anticipated that any increase in surface water runoff resulting from permanent project features would be location-specific, and that such effects would not influence surface runoff in a manner which would result in erosion or loss of topsoil.

Continued operation of the septic system would not adversely impact soil resources. The septic system would be placed in soils that are capable of adequately supporting the septic system, and continued operation of this system would not lead to any additional impacts.

Decommissioning

Decommissioning of the proposed OWEF would include the removal and disposal of turbine towers, above-ground electrical tower components, and substation components, as well as the removal of below-ground infrastructure to three feet below the ground surface. As described in Section 2.1 of the Plan of Development (OE, 2010), concrete turbine foundations would be approximately eight feet deep; therefore, decommissioning activities would leave an approximately five-foot-thick portion of each concrete foundation below the ground surface. This would minimize soil-disturbing activities required during the decommissioning period, and would avoid the need to destabilize soils throughout the project site by excavating to greater depths at the end of the project's lifetime. A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS and Record of Decision (ROD), and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of soil resources from potentially adverse impacts.

The decommissioning plan that would be implemented prior to the termination of the ROW authorization (see Section 2.1.3.4) would include BMPs consistent with the BLM Wind Energy Program EIS/ROD, similar to the BMPs implemented with construction of the proposed OWEF (presented below in Section 4.14.10). As such, erosion control measures would be implemented to avoid and/or minimize potential adverse effects associated with alterations to surface water drainage patters that could result in erosion or siltation on or off site. All roads and tower pads would be restored in accordance with the BLM-approved decommissioning plan. Earth-disturbing activities that would occur during the decommissioning phase could result in soil erosion and/or loss of topsoil, similar to the effects of earth-disturbing activities that would occur during the construction phase, but these effects would be minimized through implementation of the aforementioned BMPs and the decommissioning plan and impacts would be avoided or substantially reduced, resulting in no adverse impacts due to the Proposed Action.

4.14.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.14.2.

Construction

- **SR-1.** The preliminary geotechnical analysis found that the proposed OWEF site is not located close enough to any of the surrounding hillside mountains to be affected by either a debris flow or a landslide. No impact would occur.
- **SR-2.** The potential for the proposed OWEF to cause erosion or loss of topsoil would be minimized by BMPs and mitigation measures, described below in Section 4.14.10. Potential impacts under significance criterion SR-2 would be less than significant after implementation of mitigation measures.
- **SR-3.** The potential for the proposed OWEF to lead to impacts related to unstable geologic units is low. Implementation of BMPs and Mitigation Measure Soil-1, listed in Section 4.14.10, would reduce potential impacts under significance criterion SR-3 to a less-than-significant level.
- **SR-4.** The potential for project structures to be located on expansive soils is low. With implementation of Mitigation Measure Soil-1, described below in Section 4.14.10, impacts related to significance criterion SR-4 would be reduced to a less-than-significant level.
- **SR-5.** Although the proposed OWEF includes a septic system, that system would not be placed in soils incapable of supporting such as system. No impact would occur.

Operation and Maintenance

Operation and maintenance of the proposed OWEF would not result in any impacts to soil resources. Therefore, no impacts would occur under significance criteria SR-1 through SR-5.

Decommissioning

Decommissioning of the proposed OWEF would require earth-disturbing activities similar to those that would occur during construction; significance determinations for these activities and others that would occur during decommissioning are provided below.

- **SR-1.** Decommissioning of the proposed OWEF would remove infrastructure from the area, and would not introduce any new infrastructure such that hazards associated with debris flow or landslide would occur. No impact would occur.

- **SR-2.** Earth-disturbing activities during decommissioning would be similar to those required during construction, including excavation and grading. The potential for these activities to cause erosion or loss of topsoil would be minimized by BMPs and mitigation measures, described below in Section 4.14.10. Potential impacts under criterion SR-2 would be less than significant with the implementation of these measures.
- **SR-3.** Decommissioning would remove infrastructure from the site and would not introduce any new infrastructure such that hazards associated with unstable geologic units would occur. No impact would occur.
- **SR-4.** Decommissioning would remove infrastructure from the site and would not introduce any new infrastructure such that hazards associated with expansive soils would occur. No impact would occur.
- **SR-5.** Decommissioning would not introduce any new infrastructure, including septic systems. No impact would occur.

4.14.4 Alternative 2: 137 Wind Turbine Generators

Alternative 2 include 21 fewer wind turbine generators (WTGs) than the Proposed Action, as described in Section 2.3.2 of this EIS/EIR. Compared to the Proposed Action, the turbines eliminated under this alternative include four in the southern portion of Site 2, five in the northeast portion of Site 1, and twelve along the perimeter of the project in the northwest portion of Site 1.

4.14.4.1 Direct and Indirect Impacts

Construction

Construction activities that would affect soil resources include excavation, grading, soil compaction, and any other earth-disturbing activities to prepare the site for installation of project components; these activities would be the same under Alternative 2 as under the Proposed Action, except that the removal of 21 wind towers would avoid potential impacts associated with construction at these 21 locations and along certain access road segments. The impacts on soil resources associated with construction of the Proposed Action are described below.

Soil Erosion and Loss of Topsoil

Please see Water Resources, Section 4.19.3.1, for additional discussion of construction-related erosion impacts associated with Alternative 2.

Alternative 2 would avoid impacts associated with soil erosion and loss of topsoil at the 21 wind tower sites that would be avoided under this alternative. As with the Proposed Action, Alternative 2 would include the implementation of a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the federal Clean Water Act; erosion control features and BMPs included in the SWPPP would minimize or prevent disturbed and/or exposed materials from mobilizing in such a way that soil erosion or loss of topsoil could occur. Erosion and loss of topsoil would also be minimized through implementation of soil-related BMPs identified by the BLM, listed below in Section 4.14.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential erosion and loss of topsoil: Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*) (see Section 4.14.10 for the full text of mitigation measures). Mitigation Measure

Water-8 would ensure that project structures are designed, engineered, constructed, and maintained to avoid potential damage associated with flooding and/or erosion, and also ensure that the SWPPP would be developed and implemented for the Proposed Action includes specific BMPs to maintain existing surface drainage patterns, thus minimizing potential adverse impacts associated with flooding. Mitigation Measure Water-9 ensures that the SWPPP to be developed and implemented for the proposed OWEF or an alternative includes specific BMPs to protect water quality and avoid adverse effects of project construction on surface water quality, including jurisdictional waters. As described for the Proposed Action, with the implementation of mitigation measures above, impacts from soil erosion and loss of topsoil would be avoided or substantially reduced and adverse impacts would not occur.

Unstable Geologic Units

Alternative 2 would remove 21 wind towers from the site plan for the Proposed Action, and would therefore avoid the potential to place infrastructure on unstable geologic units at 21 locations.

Alternative 2 would be constructed on the same site as the proposed OWEF and is, therefore, subject to the same unstable geologic units, summarized below.

- The site is not located close enough to any of the surrounding hillside mountains to be affected by either a debris flow or a landslide (NAA, 2010).
- The site is considered to have low potential for liquefaction and lateral spreading. The removal of 21 wind towers from Alternative 2 would slightly decrease potential impacts associated with liquefaction and lateral spreading hazards.
- Regional subsidence has occurred in the area, and there is potential for subsidence to affect infrastructure constructed on the Alternative 2 site; however, properly designed foundations would avoid potential hazards associated with subsidence or differential settlement. This potential would be slightly less under Alternative 2 due to the removal of 21 wind towers. Mitigation Measure Soil-1 (*Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design*), described below in Section 4.14.10, would address potential impacts related to subsidence.
- The Alternative 2 site is considered to have a low potential for liquefaction. Any small hazard present would be less under Alternative 2 due to the removal of 21 wind towers.

Potential adverse impacts associated with lateral spreading, subsidence, liquefaction, collapse, and/or otherwise potentially unstable geologic units may include destabilization of project infrastructure, resulting in stability hazards to infrastructure in the immediate vicinity. Such effects would be site-specific in nature and unlikely due to final engineering and design efforts to site all project infrastructure on stable soils.

Expansive Soils

Section 3.15.1 (see "Geologic Hazards") describes that subsurface conditions are not considered to be expansive. If permanent project infrastructure were sited on expansive soils, the soil characteristics could result in destabilization of the infrastructure, and possibly in subsequent hazards to the stability of infrastructure in the immediate vicinity. This potential would be slightly less under Alternative 2 due to the removal of 21 wind towers from the Proposed Action design. Mitigation Measure Soil-1(*Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design*), described below in Section 4.14.10, would address impacts related to expansive soils. As discussed for Alternative 1, in the event potentially expansive or collapsible soils are encountered, appropriate design features, including excavation of potentially expansive or collapsible soils during construction and replacement with engineered backfill, ground-treatment processes, and redirection of surface water and drainage away from expansive foundation soils, would be employed and would avoid impacts related to destabilization of infrastructure.

Septic Tank and Leach Field

As with the Proposed Action, Alternative 2 would include installation of a septic tank and leach field. Construction of Alternative 2 would not place a septic tank or leach field on soils incapable of adequately supporting the septic system, and does not include any other alternative waste water disposal systems.

Operation and Maintenance

Operation and maintenance activities that would affect soil resources include grading and gravel application to maintain access roads throughout the site; grading activities could lead to erosion and loss of topsoil. These activities under Alternative 2 would be the same as under the Proposed Action, except that with the removal of 21 wind towers, proportionately less grading and gravel application would be required to maintain roads. As with the Proposed Action, the generally flat topography of the project site and the low average annual precipitation for the area would reduce the likelihood of erosion and loss of topsoil related to routine access road maintenance. It is anticipated that any increase in surface water runoff resulting from permanent project features would be location-specific, and that such effects would not influence surface runoff in a manner which would result in erosion or loss of topsoil.

Continued operation of the septic system would not adversely impact soil resources. The septic system would be placed in soils that are capable of adequately supporting the septic system, and continued operation of this system would not lead to any additional impacts.

Decommissioning

Decommissioning activities under Alternative 2 would be the same as under the Proposed Action, except that 21 fewer wind towers and associated infrastructure such as electrical components and access roads would need to be removed. As described for Alternative 1 above, with the implementation of BMPs and the decommissioning plan, impacts would be avoided or substantially reduced resulting in no adverse impacts. Therefore, with the reduction of 21 turbines, potential impacts to soils would be proportionately less under Alternative 2 than under the Proposed Action.

A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS and Record of Decision (ROD), and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of soil resources from potentially adverse impacts.

Decommissioning of the proposed OWEF would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff such that erosion or loss of topsoil would occur, and no additional mitigation measures are required.

4.14.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project are presented below based on the CEQA Significance Criteria presented in Section 4.14.2.

Construction

- **SR-1.** The Alternative 2 site is not located close enough to any of the surrounding hillside mountains to be affected by either a debris flow or a landslide. No impact would occur.
- **SR-2.** The potential for Alternative 2 to cause erosion or loss of topsoil would be minimized by BMPs and mitigation measures, described below in Section 4.14.10. Potential impacts under criterion SR-2 would be less than significant after implementation of mitigation measures.
- **SR-3.** The potential for Alternative 2 to lead to impacts related to unstable geologic units is low. Implementation of BMPs and Mitigation Measure Soil-1, listed in Section 4.14.10, would reduce potential impacts under criterion SR-3 to a less-than-significant level.
- **SR-4.** The potential for project structures to be located on expansive soils is low. With implementation of Mitigation Measure Soil-1, described below in Section 4.14.10, impacts related to criterion SR-4 would be reduced to a less-than-significant level.
- **SR-5.** Alternative 2 includes a septic system, but that system would not be placed in soils incapable of supporting it. No impact would occur.

Operation and Maintenance

Operation and maintenance of Alternative 2 would not result in any impacts to soil resources. Therefore, no impacts would occur under significance criteria SR-1 through SR-5.

Decommissioning

As with the Proposed Action, decommissioning of Alternative 2 would not result in impacts under significance criteria SR-1 related to debris flow or landslides, SR-3 related to unstable geologic units, SR-4 related to expansive soils, or SR-5 related to septic systems. Under significance criterion SR-2, the potential for decommissioning of Alternative 2 to cause erosion or loss of topsoil would be similar to this potential during the construction phase, due to earth-disturbing activities required to remove project infrastructure and restore the site's original grade as much as possible. BMPs and mitigation measures described in Section 4.14.10 would ensure that impacts under significance criterion SR-2 would be less than significant.

4.14.5 Alternative 3: 105 Wind Turbine Generators

Alternative 3 would include 53 fewer wind turbine generators (WTGs) than the Proposed Action, as described in Section 2.3.2 of this EIS/EIR. Compared to the Proposed Action, the turbines eliminated under this alternative include 16 in Site 2, 22 in the northeast portion of Site 1, and 12 along the perimeter of the project in the northwest portion of Site 1. As such, under Alternative 3 there would be no construction on Site 2 and no construction on the northeast portion of Site 1.

4.14.5.1 Direct and Indirect Impacts

Construction

Construction activities that would affect soil resources include excavation, grading, soil compaction, and any other earth-disturbing activities to prepare the site for installation of project components; these activities would be the same under Alternative 3 as under the Proposed Action, except that the removal of 53 wind towers would avoid potential impacts associated with construction at these 53 locations and along certain access road segments. The impacts on soil resources associated with construction of the Proposed Action are described below.

Soil Erosion and Loss of Topsoil

Please see Water Resources, Section 4.19.3.1, for additional discussion of construction-related erosion impacts associated with Alternative 3.

Alternative 3 would avoid impacts associated with soil erosion and loss of topsoil at the 53 wind tower sites that would be avoided under this alternative. As with the Proposed Action, Alternative 3 would include the implementation of a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the federal Clean Water Act; erosion control features and BMPs included in the SWPPP would minimize or prevent disturbed and/or exposed materials from mobilizing in such a way that soil erosion or loss of topsoil could occur. Erosion and loss of topsoil would also be minimized through implementation of soil-related BMPs identified by the BLM, listed below in Section 4.14.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential erosion and loss of topsoil: Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*) (see Section 4.14.10 for the full text of mitigation measures). Mitigation Measure Water-8 would ensure that project structures are designed, engineered, constructed, and maintained to avoid potential damage associated with flooding and/or erosion, and also ensure that the SWPPP would be developed and implemented for the Proposed Action includes specific BMPs to maintain existing surface drainage patterns, thus minimizing potential adverse impacts associated with flooding. Mitigation Measure Water-9 ensures that the SWPPP to be developed and implemented for the proposed OWEF or an alternative includes specific BMPs to protect water quality and avoid adverse effects of project construction on surface water quality, including jurisdictional waters. As discussed for the Proposed Action, with the implementation of mitigation measures, impacts due to soil erosion and loss of topsoil would be avoided or substantially reduced and adverse impacts would not occur.

Unstable Geologic Units

Alternative 3 would remove 53 wind towers from the site plan for the Proposed Action, and would therefore avoid the potential to place infrastructure on unstable geologic units at 53 locations.

Alternative 3 would be constructed on the same site as the proposed OWEF and is therefore subject to the same unstable geologic units, summarized below.

- The site is not located close enough to any of the surrounding hillside mountains to be affected by either a debris flow or a landslide (NAA, 2010).
- The site is considered to have low potential for liquefaction and lateral spreading. The removal of 53 wind towers from Alternative 3 would slightly decrease potential impacts associated with liquefaction and lateral spreading hazards.
- Regional subsidence has occurred in the area, and there is potential for subsidence to affect infrastructure constructed on the Alternative 3 site; however, properly designed foundations would avoid potential hazards associated with subsidence or differential settlement. This potential would be slightly less under Alternative 3 due to the removal of 53 wind towers. Mitigation Measure Soil-1 (*Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design*), described below in Section 4.14.10, would address potential impacts related to subsidence.

- The Alternative 3 site is considered to have a low potential for liquefaction. Any small hazard present would be less under Alternative 3 due to the removal of 53 wind towers.

Potential adverse impacts associated with lateral spreading, subsidence, liquefaction, collapse, and/or otherwise potentially unstable geologic units may include destabilization of project infrastructure, resulting in stability hazards to infrastructure in the immediate vicinity. Such effects would be site-specific in nature and unlikely due to final engineering and design efforts to site all project infrastructure on stable soils.

Expansive Soils

Section 3.15.1 (see "Geologic Hazards") describes that subsurface conditions are not considered to be expansive. If permanent project infrastructure were sited on expansive soils, the soil characteristics could result in destabilization of the infrastructure, and possibly in subsequent hazards to the stability of infrastructure in the immediate vicinity. As discussed for Alternative 1, in the event potentially expansive or collapsible soils are encountered appropriate design features, including excavation of potentially expansive or collapsible soils during construction and replacement with engineered backfill, ground-treatment processes, and redirection of surface water and drainage away from expansive foundation soils, would be employed and would avoid impacts related to destabilization of infrastructure.

This potential impact would be less under Alternative 3 due to the removal of 53 wind towers from the Proposed Action design.

Septic Tank and Leach Field

As with the Proposed Action, Alternative 3 would include installation of a septic tank and leach field. Construction of Alternative 3 would not place a septic tank or leach field on soils incapable of adequately supporting the septic system, and does not include any other alternative waste water disposal systems.

Operation and Maintenance

Operation and maintenance activities that would affect soil resources include grading and gravel application to maintain access roads throughout the site; grading activities could lead to erosion and loss of topsoil. These activities under Alternative 3 would be the same as under the Proposed Action, except that with the removal of 53 wind towers, proportionately less grading and gravel application would be required to maintain roads. As with the Proposed Action, the generally flat topography of the project site and the low average annual precipitation for the area would reduce the likelihood of erosion and loss of topsoil related to routine access road maintenance. It is anticipated that any increase in surface water runoff resulting from permanent project features would be location-specific, and that such effects would not influence surface runoff in a manner which would result in erosion or loss of topsoil.

Continued operation of the septic system would not adversely impact soil resources. The septic system would be placed in soils that are capable of adequately supporting the septic system, and continued operation of this system would not lead to any additional impacts.

Decommissioning

Decommissioning activities under Alternative 3 would be the same as under the Proposed Action, except that 53 fewer wind towers and associated infrastructure such as electrical components and access roads would need to be removed. Therefore, potential impacts to soils would be proportionately less under Alternative 3 than under the Proposed Action.

A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS and Record of Decision (ROD), and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of soil resources from potentially adverse impacts.

Decommissioning of the proposed OWEF would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff such that erosion or loss of topsoil would occur, and no additional mitigation measures are required.

4.14.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project are presented below based on the CEQA Significance Criteria presented in Section 4.14.2.

Construction

- **SR-1.** The Alternative 3 site is not located close enough to any of the surrounding hillside mountains to be affected by either a debris flow or a landslide. No impact would occur.
- **SR-2.** The potential for Alternative 3 to cause erosion or loss of topsoil would be minimized by BMPs and mitigation measures, described below in Section 4.14.10. Potential impacts under criterion SR-2 would be less than significant after implementation of mitigation measures.
- **SR-3.** The potential for Alternative 3 to lead to impacts related to unstable geologic units is low. Implementation of BMPs and Mitigation Measure Soil-1, listed in Section 4.14.10, would reduce potential impacts under criterion SR-3 to a less-than-significant level.
- **SR-4.** The potential for project structures to be located on expansive soils is low. With implementation of Mitigation Measure Soil-1, described below in Section 4.14.10, impacts related to criterion SR-4 would be reduced to a less-than-significant level.
- **SR-5.** Alternative 3 includes a septic system, but that system would not be placed in soils incapable of supporting it. No impact would occur.

Operation and Maintenance

Operation and maintenance of Alternative 3 would not result in any impacts to soil resources. Therefore, no impacts would occur under criteria SR-1 through SR-5.

Decommissioning

As with the Proposed Action, decommissioning of Alternative 3 would not result in impacts under significance criteria SR-1 related to debris flow or landslides, SR-3 related to unstable geologic units, SR-4 related to expansive soils, or SR-5 related to septic systems. Under significance criterion SR-2, the potential for decommissioning of Alternative 3 to cause erosion or loss of topsoil would be similar to this potential during the construction phase, due to earth-disturbing activities required to remove project infrastructure and restore the site's original grade as much as possible. BMPs and mitigation measures described in Section 4.14.10 would ensure that impacts under significance criterion SR-2 would be less than significant.

4.14.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.14.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur and existing conditions relevant to soil resources would continue, but may be altered at some point in the future by construction of a different wind energy development or other proposed project. Impacts associated with the proposed OWEF would not occur. However, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Construction and operation impacts to soil resources would occur at these other sites when they are developed.

4.14.6.2 CEQA Significance Determinations

Alternative 4 would not result in impacts to soil resources.

4.14.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.14.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to soil resources would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. Impacts associated with the proposed OWEF would not occur. However, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Construction and operation impacts to soil resources would occur at these other siteswhen they are developed.

4.14.7.2 CEQA Significance Determinations

Alternative 5 would not result in impacts to soil resources.

4.14.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.14.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. Impacts associated with the proposed OWEF would not occur. In the future, if another wind development project is implemented, impacts to soil resources would likely occur.

4.14.8.2 CEQA Significance Determinations

Alternative 6 would not result in impacts to soil resources.

4.14.9 Cumulative Impacts

4.14.9.1 Geographic Extent/Context

The geographic extent for analysis of cumulative impacts related to soil resources is the project site itself. Any potential impacts to soil resources related to construction, operation and maintenance, and decommissioning of the proposed OWEF would be site-specific and would only occur within the proposed project boundary; off-site soil resources would not be affected.

4.14.9.2 Existing Cumulative Conditions

Only one past or present project has been identified within the proposed OWEF site boundary that could have the potential to combine with impacts of the proposed OWEF or an alternative to result in cumulative impacts. This project is the Sunrise Powerlink, a 150-mile transmission line project that crosses through the proposed OWEF site, with construction planned to be complete in 2012. Sunrise Powerlink is shown as a red line on Figure 4.1-1b. Also, as shown on Figure 4.1-1b, the proposed Coyote Wells Specific Plan is located in close proximity to the Proposed OWEF site, between proposed Site 1 and Site 2, but this Specific Plan is not located within the project boundaries and does not contribute to existing cumulative conditions. Therefore, existing cumulative conditions relevant to soils are characterized by the proposed OWEF and the Sunrise Powerlink project. Figure 2.3-1 (Proposed Site Plan) shows that no wind turbines would be placed in the alignment (corridor) of the proposed transmission line.

4.14.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. The only reasonably foreseeable projects identified within the proposed OWEF site boundary is the Sunrise Powerlink.

4.14.9.4 Construction

No unavoidable adverse impacts to soil resources related to construction of the proposed OWEF or an alternative would occur after implementation of BMPs and mitigation measures described in Section 4.14.10. The geographic extent of cumulative analysis for soils is limited to the project site itself, and is limited to the Sunrise Powerlink project. As mentioned, construction of the Sunrise Powerlink is anticipated to be complete in 2012. If construction of portions of the Sunrise Powerlink and the proposed OWEF or an alternative occurs at the same time and within the same specific vicinity on the project site, potential cumulative impacts could occur.

Sunrise is a transmission line project that would be constructed within a designated utility corridor through the project site. The proposed OWEF or an alternative would place permanent access roads and underground collection systems beneath this utility corridor, but no WTGs or project structures (such as the O&M building) would be placed within the utility corridor. Ground disturbance associated with the placement of underground collection systems and/or road improvements required for project access is not anticipated to have the potential to result in impacts to soil resources that could combine with similar impacts of the Sunrise Powerlink due to the site-specific nature of such effects; additionally, the potential for such effects to occur at the same time and in the same location is considered unlikely. Therefore, impacts to soils associated with construction of transmission structures under the Sunrise Powerlink project and wind turbines under the proposed OWEF or an alternative would not result in cumulative effects. Traffic associated with construction of these two projects would involve the use of some of the same access roads. However, BMPs and mitigation measures to minimize or avoid potential erosion impacts are included in the Proposed Action and would not result in a substantial contribution to cumulative impacts to soil resources.

4.14.9.5 Operation and Maintenance

Operation and maintenance of the proposed OWEF or an alternative would not result in impacts to soil resources. Therefore, the proposed OWEF would not contribute to cumulative impacts related to soils.

4.14.9.6 Decommissioning

As described in Sections 4.14.3 through 4.14.5, decommissioning of the proposed OWEF or an alternative would involve soil-disturbing activities to remobe and dispose of turbine towers, above-ground electrical tower components, and substation components, and to remove below-ground infrastructure to three feet below the ground surface (leaving five-foot-thick slabs of eight-foot-deep foundations in-place). The geographic extent of cumulative analysis for soils is limited to the project site itself, and is limited to the Sunrise Powerlink project. If decommissioning of the Sunrise Powerlink and the proposed OWEF or an alternative occurs at the same time and within the same specific vicinity on the project site, potential cumulative impacts could occur. However, Sunrise is a transmission line project that would be decommissioned within a designated utility corridor through the project site, and the proposed OWEF or an alternative would not require decommissioning of WTGs, WTG foundations, or project-related structures within this utility corridor. Therefore, impacts to soils associated with decommissioning of transmission structures under the Sunrise Powerlink project and wind turbines under the proposed OWEF or an alternative would not occur in the same immediate vicinity. As described in the aforementioned Sections 4.14.3 through 4.14.5, earth-disturbing activities that would occur during the decommissioning phase could result in soil erosion and/or loss of topsoil, similar to the effects of earth-disturbing activities that would occur during the construction phase, but these effects would be minimized or avoided through implementation of the aforementioned BMPs and the decommissioning plan and impacts would be avoided or substantially reduced. Therefore, similar to construction, the proposed OWEF or an alternative would not contribute to cumulative impacts to soil resources.

4.14.9.7 CEQA Significance Determinations

If construction of the proposed Sunrise Powerlink project and the proposed OWEF or an alternative were to occur at the same time and within the same vicinity, potential impacts could occur due to soil erosion and sedimentation, particularly if construction traffic uses the same access roads within the same time period. However, this impact of the proposed OWEF would be less than significant, and construction of the proposed OWEF or an alternative would include BMPs and mitigation measures to minimize or avoid potential erosion impacts. Therefore, although a cumulative impact could occur, the potential for construction to occur in the same time period at the proposed OWEF site is considered unlikely. Additionally, following implementation of BMPs and mitigation measures presented in Section 4.14.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Soil Resources would not be significant.

Operation and maintenance of the proposed OWEF or an alternative would not result in a substantial contribution to cumulative impacts to soil resources

Decommissioning of the proposed OWEF or an alternative would include implementation of a decommissioning plan, which would minimize or avoid potential impacts to soils. As described in Section 4.14.9.3, there are no reasonably foreseeable future projects within the cumulative extent of cumulative analysis for the proposed OWEF and alternatives, which is limited to the project site boundaries. Therefore, unless decommissioning of the Sunrise Powerlink project where it crosses through the OWEF site were to occur at the same time as decommissioning of the proposed OWEF or an alternative, similar impacts from earth-disturbing activities of the two projects could potentially result in cumulative impacts to soil erosion or loss of topsoil. The likelihood of decommissioning activities occurring within the same time period and the same immediate vicinity is considered very low. Following implementation of BMPs and mitigation measures presented in Section 4.14.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Soil Resources would not be significant.

4.14.10 Mitigation Measures

The proposed OWEF and alternatives would include implementation of recommended BMPs from BLM's Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States (BLM, 2005). The BLM BMPs are presented below.

BLM Best Management Practices

- The size of disturbed land shall be minimized as much as possible. Existing roads and borrow pits should be used as much as possible.
- Topsoil removed during construction shall be salvaged and reapplied during reclamation. Disturbed soils shall be reclaimed as quickly as possible and protective covers shall be applied.
- Erosion controls that comply with county, state, and federal standards shall be applied. Practices such as jute netting, silt fences, and check dams shall be applied near disturbed areas.
- On-site surface runoff control features shall be designed to minimize the potential for increased localized soil erosion. Drainage ditches shall be constructed where necessary but held to a minimum. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, drainage ditches, and culverts shall be cleaned and maintained regularly.
- Operators shall identify unstable slopes and local factors that can induce slope instability (such as groundwater conditions, precipitation, earthquake activities, slope angles, and dip angles of geologic

strata). Operators also shall avoid creating excessive slopes during excavation and blasting operations. Special construction techniques shall be used where applicable in areas of steep slopes, erodible soil, and stream channel/wash crossings.

- Borrow material shall be obtained only from authorized and permitted sites.
- Access roads shall be located to follow natural contours of the topography and minimize side hill cuts.
- Foundations and trenches shall be backfilled with originally excavated materials as much as possible. Excavation material should be disposed of only in approved areas to control soil erosion and to minimize leaching of hazardous constituents. If suitable, excess excavation materials may be stockpiled for use in reclamation activities.
- Existing drainage systems shall not be altered, especially in sensitive areas such as erodible soils or steep slopes. When constructing stream or wash crossings, culverts or water conveyances for temporary and permanent roads shall be designed to accommodate the runoff of a 10-year storm. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly.

In addition to the BLM BMPs listed above, project-specific mitigation measures have been developed to reduce and/or avoid potential soil resources impacts associated with construction of the proposed OWEF or an alternative. These project-specific mitigation measures are presented below.

Soil-1 **Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design.** The design-level geotechnical studies to be performed by the Applicant shall identify the presence, if any, of potentially detrimental soil chemicals, such as chlorides and sulfates. Appropriate design measures for protection of reinforcement, concrete, and metal-structural components against corrosion shall be utilized, such as use of corrosion-resistant materials and coatings, increased thickness of project components exposed to potentially corrosive conditions, and use of passive and/or active cathodic protection systems. The geotechnical studies shall also identify areas with potentially expansive or collapsible soils and include appropriate design features, including excavation of potentially expansive or collapsible soils during construction and replacement with engineered backfill, ground-treatment processes, and redirection of surface water and drainage away from expansive foundation soils. Studies shall conform to industry standards of care and American Society for Testing and Materials (ASTM) standards for field and laboratory testing. Study results and proposed solutions shall be provided for review and approval to the BLM, for actions on BLM lands, and to Imperial County, for actions on County lands, at least 60 days before final project design.

Water-8 **Flood and Erosion Structure Damage Protection.** The full text of this measure is presented in Section 4.19.10.

Water-9 **Construction SWPPP Specifications.** The full text of this measure is presented in Section 4.19.10.

4.14.11 Residual Impacts After Mitigation

Following implementation of BMPs and mitigation measures provided in Section 4.14.10, all adverse impacts on soil resources resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced. There would be no adverse unavoidable impacts on soil resources.

4.15 Special Designations

4.15.1 Methodology for Analysis

The analysis of the effects of the OWEF must comply with NEPA requirements given the BLM land jurisdiction related to the proposed OWEF. This analysis focuses on whether the proposed OWEF would conflict with the management goals of any applicable special designations.

This section discusses the special designation impacts that would occur with implementation of the Proposed Action or alternatives. Impacts may occur during construction from noise, fugitive dust, and lighting that could affect users in designated Areas of Critical Environmental Concern (ACEC), recreation areas and/or Wilderness Areas including visual impacts on users in designated Wilderness Areas. Visual impacts are discussed in further detail in Section 4.18.

4.15.2 CEQA Significance Criteria

Agriculture and Forestry Resources

The proposed OWEF could affect agriculture and forestry resources if the project would:

SD-1 *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.*

SD-2 *Conflict with existing zoning for agricultural use or a Williamson Act Contract.*

SD-3 *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).*

SD-4 *Result in the loss of forest land or conversion of forest land to non-forest use.*

SD-5 *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.*

For the OWEF, the criteria listed above were determined to be inapplicable or would result in no impact and, therefore, are not addressed further in the impact analysis presented in this section. There is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the proposed Project area (DOC, 2008). Therefore, construction, operation and decommissioning of the project would not convert designated farmland to a nonagricultural use. None of the parcels on the project site are covered by Williamson Act contracts.

The project site is not designated as forest land by the California Department of Forestry and Fire Protection or the United States Department of Agriculture, Forest Service. The proposed OWEF would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. The majority of the project site is located under the BLM's California Desert Conservation Area Plan. Portions of the project site are designated as Open Space, Desert Residential, and Government/Special Public under Imperial County and not zoned as forest land or timberland for timber production. The proposed OWEF would not involve other changes in the existing environment that would result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. Construction, operation, and decommissioning of the proposed OWEF would not have any direct or indirect impacts on Farmland or forest land.

4.15.3 Alternative 1: Proposed Action

4.15.3.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for the Proposed Action is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

As discussed in Section 3.16 (Environmental Setting of Special Designations), areas are designated ACECs due to the presence of significant natural, cultural and historic resources. Wilderness Areas, which are generally 5,000 acres or more in size, offer outstanding opportunities for solitude or a primitive and unconfined type of recreation; such areas may also contain ecological, geological, or other features that have scientific, scenic, or historical value. Temporary effects associated with fugitive dust, noise, and visual disturbance would not require the special designated areas within close proximity to the proposed OWEF to remove special designated status (i.e., ACEC, Wilderness Area, Historic Trail).

Construction

The Proposed Action would be located within the vicinity of the following ACECs:

- Approximately 1.8 miles south of the Coyote Mountains Fossil Site;
- Approximately three miles northeast of Table Mountain; and
- Approximately two miles west of the Yuha Basin.

The Proposed Action would be located within the vicinity of the following national recreation area:

- Approximately 1.5 miles southwest of the Plaster City Off Highway Vehicle (OHV) Open Area.

The Proposed Action would be located within the vicinity of the following national scenic and historic trail:

- Approximately 4 miles west of the Juan Bautista de Anza National Historic Trail.

The Proposed Action would be located within the vicinity of the following wilderness areas:

- Immediately north of the Jacumba Wilderness;
- Approximately one mile south of the Coyote Mountains Wilderness;
- Immediately adjacent to and east of the Anza-Borrego Desert State Park (ABDSP).

The Proposed Action would be located within the vicinity of the following wilderness study area:

- Approximately 2.1 miles northeast of the Table Mountain Wilderness Study Area.

The Proposed Action would have no direct effects on special designations during construction, since the site is not subject to any such designation, and no new designations or amendments to existing designations are proposed. However, due to the proximity of the Proposed Action to the special designations mentioned above, temporary effects associated with fugitive dust, noise, and visual disturbance would be experienced by users of the ACECs, the national historic trail, and wilderness and recreation areas. Fugitive dust during construction activities could impact the air quality experienced by users of these specially designated areas, as well as the introduction of construction noise caused by equipment required for construction, motor vehicle use, voices, music, or other worker-related sounds that could disturb the peaceful and serene environment enjoyed by users. Due to the prevailing wind direction towards the north and northeast, temporary dust pollutants would be experienced mostly by users of the Coyote Mountains Wilderness Area/ACEC and the Plaster City OHV Area. Noise effects would most likely be experienced by users in the nearby ABDSP and Jacumba Wilderness Area.The character and quality of view experienced by users would be disturbed by the introduction of several industrial structures including construction equipment, wind turbines, and meteorological towers. Visual effects would be experienced by users of special designated areas at far away distances, but the greatest visual impact would most likely be experienced by users within a 10-mile vicinity.

Operation and Maintenance

The Proposed Action would be located within the vicinity of several special designations, as mentioned above under “Construction”.

There would be permanent visual impacts from the proposed wind turbine generators, proposed meteorological towers, proposed project substation, and proposed operation and maintenance facility. Visual effects would be experienced by users of special designated areas at far away distances, but the greatest visual impact would most likely be experienced by users within a 10-mile vicinity. While operation and maintenance would not cause any direct impact on the special designations, visitors utilizing the wilderness and recreation areas would be impacted. For example, nighttime lighting from the proposed wind turbines would introduce a new source of light to the area and the character and quality of view experienced by recreation users would be disturbed by the appearance of permanent wind turbines, meteorological towers, transmission lines, a project substation, and an operation and maintenance facility.

Decommissioning

The Proposed Action would be located within the vicinity of several special designations, as mentioned above under “Construction.”

Decommissioning activities would cause temporary disturbance to users of the recreation and wilderness areas, similar to those described under “Construction” above. Fugitive dust during decommissioning activities could impact the air quality experienced by users as well as the introduction of noise caused by equipment required for decommissioning, motor vehicle use, voices, music, or other worker-related sounds that could disturb the peaceful and serene environment enjoyed by users. Due to the prevailing wind direction towards the north and northeast, temporary dust pollutants would be experienced mostly by users of the Coyote Mountains Wilderness Area/ACEC and the Plaster City OHV Area. Noise effects would most likely be experienced by users in the nearby ABDSP and Jacumba Wilderness Area.The character and quality of view experienced by users would be disturbed by the dismantling of several industrial structures including wind turbines, meteorological towers, a project substation, and an operation and maintenance facility. Visual effects would be experienced by users of special designated areas at far away distances, but the greatest visual impact would most likely be experienced by users within a 10-mile vicinity.

After the Proposed Action has been decommissioned, users would experience a beneficial impact, as the permanent visual impacts, described for "Operation and Maintenance" above, would be removed. Although revegetation in this desert region is difficult and generally of limited success, the site would return to a more natural undeveloped state.

4.15.3.2 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.4 Alternative 2: 137 Wind Turbine Generators Alternative

4.15.4.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for Alternative 2 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Potential impacts on special designations during construction of the Alternative 2 would be the same as described under "Construction" for the Proposed Action. As described above, temporary effects associated with fugitive dust, noise, and visual resources would be experienced by users of the ACECs, the national historic trail, and wilderness and recreation areas. Although a smaller number of turbines would be constructed, temporary effects would still be experienced, but at a smaller magnitude. Temporary effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF.

Operation and Maintenance

Potential impacts on special designations during operation and maintenance of Alternative 2 would be the same as described under "Operation and Maintenance" for the Proposed Action. As described above, visitors utilizing the ACECs, the national historic trail, and wilderness and recreation areas would experience effects associated with industrial structures until they are removed at the end of the project life (decommissioning). Although a smaller number of turbines would be operating, effects would still be experienced, but at a smaller magnitude. Effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF.

Decommissioning

Potential impacts on special designations during decommissioning of the Alternative 2 would be the same as described under "Decommissioning" for the Proposed Action. As described above, effects associated with air quality, noise and visual resources would be experienced by users of the ACECs, the national historic trail, and wilderness and recreation areas. Although a smaller number of turbines would be dismantled, effects would still be experienced, but at a smaller magnitude. Temporary effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF.

After the alternative has been decommissioned, users would experience a beneficial impact, as the permanent visual impacts, described for "Operation and Maintenance" above, would be removed. Although revegetation in this desert region is difficult and generally of limited success, the site would return to a more natural undeveloped state.

4.15.4.2 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.5 Alternative 3: 105 Wind Turbine Generators Alternative

4.15.5.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts for Alternative 3 is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

Construction

Potential impacts on special designations during construction of Alternative 3 would be the same as described under "Construction" for the Proposed Action. As described above temporary effects associated with fugitive dust, noise, and visual disturbance would be experienced by users of the ACECs, the national historic trail, and wilderness and recreation areas. Although a smaller number of turbines would be constructed, temporary effects would still be experienced, but at a smaller magnitude. Temporary effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF.

Operation and Maintenance

Potential impacts on special designations during operation and maintenance of Alternative 3 would be the same as described under "Operation and Maintenance" for the Proposed Action. As described above, visitors utilizing the ACECs, the national historic trail, and wilderness and recreation areas would experience effects associated with industrial structures until the project is decommissioned. Although a smaller number of turbines would be operating, temporary effects would still be experienced, but at a smaller magnitude. Effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF.

Decommissioning

Potential impacts on special designations during decommissioning of Alternative 3 would be the same as described under "Decommissioning" for the Proposed Action. As described above, effects associated with air quality, noise and visual resources would be experienced by users of the ACECs, the national historic trail, and wilderness and recreation areas. Although a smaller number of turbines would be dismantled, temporary indirect effects would still be experienced, but at a smaller magnitude. Temporary effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF. Once removed, the impact to special designations would return to similar pre-project conditions.

4.15.5.2 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.15.6.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would not amend the California Desert Conservation Area (CDCA) Plan. As a result, no wind energy project would be constructed, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan, as amended.

Because there would be no amendment to the CDCA Plan and no wind project approved for the site under this alternative, no new structures or facilities would be constructed or operated on the site and no new ground disturbance would occur. As a result, none of the impacts on special designation areas from construction or operation of the project would occur. In particular, no direct or indirect impacts on ACECs, wilderness areas, or other special designations would occur that would affect the resources these special designation areas are meant to protect. However, the land on which the project is proposed would become available to other uses that are consistent with the BLM's CDCA Plan, including another renewable energy project. If the proposed OWEF is not approved, renewable projects would likely be developed on other sites in Imperial County, in other areas of California, or in adjacent states within the Desert Southwest as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates. Several dozen wind and solar development applications for use of BLM land have been submitted for approximately one million acres of the California Desert Conservation Area. Additional BLM land in Nevada and Arizona also has applications for wind and solar projects. Potential adverse impacts to special designation areas on non-BLM-administered lands under the no action alternative could increase in the event developers focus their wind energy development efforts on state-owned, Tribal, and private lands. While wind energy development on nonfederal lands is subject to a wide array of environmental reviews and approvals by virtue of state and local permitting processes, they may not be subject to NEPA requirements if federal funding or permitting is not required for the project.

4.15.6.2 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.15.7.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the site, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan, as amended.

Because the CDCA Plan would be amended to make the area unavailable for future wind energy development, it is expected that the site would continue to remain in its existing condition unless another use is designated in this amendment. As a result, the special designation areas that are located within the vicinity of the site are not expected to change noticeably from existing conditions and, as such, this No Action Alternative would have no adverse impact on special designation areas within and adjacent to the site in the long term. However, in the absence of this project, other renewable energy projects may be constructed to meet state and federal mandates, and those projects at other locations could affect special designation areas.

4.15.7.2 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.15.8.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to allow for other wind projects on the site. As a result, it is possible that another wind energy project could be constructed on the site.

Because the CDCA Plan would be amended, it is possible that the site would be developed with the same or a different wind technology. As a result, it is likely that impacts on special designation areas would result from the construction and operation of the wind technology and resulting ground disturbance and would likely be similar to the impacts on special designation areas from the proposed OWEF, including indirect impacts on recreation or wilderness areas. Different wind technologies require different amounts of grading; however, it is expected that all wind technologies would require grading and maintenance. As such, this No Action Alternative could result in impacts on special designation areas similar to the impacts under the proposed OWEF.

4.15.8.2 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.9 Anza-Borrego Desert State Park (ABDSP)

As discussed above, the proposed OWEF is located immediately adjacent to and east of the Anza-Borrego Desert State Park. The topics listed below are of specific concern to the ABDSP and were identified in a comment letter on the Notice of Intent, submitted by the California Department of Parks and Recreation. The environmental issues listed below have been addressed in this EIS/EIR.

Migatory Birds

Potential adverse impacts to migratory birds at and in the vicinity of the proposed OWEF have been addressed in the discussion of wildlife impacts from the proposed OWEF. Please see Section 4.21 (Wildlife Resources) of this EIS/EIR.

Golden Eagles

Potential adverse impacts to golden eagles at and in the vicinity of the proposed OWEF have been addressed in the discussion of wildlife impacts from the proposed OWEF. Please see Section 4.21 (Wildlife Resources) of this EIS/EIR.

Peninsular Bighorn Sheep

Potential adverse impacts to Peninsular bighorn sheep at and in the vicinity of the proposed OWEF have been addressed in the discussion of wildlife impacts from the proposed OWEF. Please see Section 4.21 (Wildlife Resources) of this EIS/EIR.

Other Species of Special Concern

Potenial adverse impacts to other species of special concern, including the flat-tailed horned lizard, barefoot banded gecko, and California Native Plant Society listed plants at and in the vicinity of the proposed OWEF have been addressed in the discussion of wildlife and vegetation impacts from the proposed OWEF. Please see Sections 4.17 (Vegetation Resources) and 4.21 (Wildlife Resources) of this EIS/EIR.

Viewsheds

Potential adverse impacts to viewsheds from the ABDSP and within the vicinity of the proposed OWEF have been addressed in the discussion of visual impacts from the proposed OWEF. Please see Section 4.18 (Visual Resources) of this EIS/EIR.

Paleontological Resources

Potenial adverse impacts to paleontological resources at the proposed OWEF site have been addressed in the discussion of paleontological resources impacts from the proposed OWEF. Please see Section 4.10 (Paleontological Resources) of this EIS/EIR.

Air Quality

Potenial adverse impacts to air quality at and within the vicinity of the proposed OWEF have been addressed in the discussion of air quality impacts from the proposed OWEF. Please see Section 4.2 (Air Resources) of this EIS/EIR.

Cultural and Historical Resources

Potenial adverse impacts to historic and prehistoric cultural resources at and within the vicinity of the proposed OWEF have been addressed in the discussion of cultural resources impacts from the proposed OWEF. Please see Section 4.4 (Cultural Resources) of this EIS/EIR.

Cumulative Impacts

Potenial cumulative impacts to all environmental resource areas, including potential impacts to resources within the ABDSP have been addressed in the discussion of cumulative impacts for all environmental resource areas included in this EIS/EIR. Please see Sections 4.1 through 4.21 of this EIS/EIR.

4.15.10 Cumulative Impacts

4.15.10.1 Geographic Extent/Context

Several special designation areas are located in the general vicinity of the project area. These areas are mentioned under Section 4.15.3, and include the following:

- Coyote Mountains Fossil Site;
- Table Mountain;
- Table Mountain Wilderness Study Area;
- Yuha Basin;
- Plaster City OHV Open Area;
- Juan Bautista de Anza National Historic Trail;
- Jacumba Wilderness;
- Coyote Mountains Wilderness;
- ABDSP

Due to the presence of several special designation areas within the vicinity of the project site and the proposed OWEF's potential contribution to cumulative impacts on these areas, the geographic extent of analysis is a 10-mile radius from the project site. Locations most likely to be affected within special designation areas would be included within this 10-mile radius. Beyond this 10-mile radius, potential impacts associated with fugitive dust, noise, and visual disturbance would be greatly reduced. Potential cumulative impacts could occur for the entire duration of the proposed OWEF, from the initiation of construction to the conclusion of facility decommissioning.

4.15. 10.2 Existing Cumulative Conditions

The project site and surrounding special designation areas consist of undeveloped land, open space land, scattered rural residences, and the communities of Ocotillo and Nomirage. Past and ongoing development throughout these areas has resulted in alterations to the natural landscape, including effects from air quality, noise and visual resources on special designation areas. Temporary impacts from Air Quality and Noise have been and continue to be reduced through mitigation measures. However, permanent impacts to visual resources from special designated areas remain.

4.15. 10.3 Reasonably Foreseeable Projects

A wide variety of existing development projects could contribute to the cumulative conditions for special designations in regards to effects from air quality, noise and visual resources in the cumulative analysis area. Tables 4.1-1 and 4.1-2, presented in Section 4.1 of this EIS/EIR, list cumulative projects in the vicinity of the project site and surrounding area. Consideration of the following projects identified in Tables 4.1-1 and 4.1-2 and shown on Figures 4.1-1a and 4.1-1b was used to develop this analysis of cumulative effects for special designations:

- ESJ Wind Project I
- Imperial Valley Solar – Solar Two
- Coyote Wells Specific Plan Project
- Ketchum Ranch
- Elder – TPM 20981
- Renewergy, LLC

- Grizzle – TPM 20719
- Pacific Bell Cell Site
- SDG&E Proposed Photovoltaic Solar Field
- Sunrise Powerlink

These projects were selected based on the distance of where impacts from air quality, noise and visual resources would be experienced from the special designated areas. Several types of development projects could contribute to the cumulative impact of the Proposed Action and alternatives, including housing development projects, commercial and industrial development, and renewable energy projects. These types of reasonably foreseeable projects could combine with potential impacts of the Proposed Action or an alternative to affect special designations within the geographic extent of this cumulative analysis.

Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. With the exception of five projects (Ketchum Ranch; Elder – TPM 20981; Grizzle – TPM 20719; SDG&E Proposed Photovoltaic Solar Field; Renewergy, LLC), for which impacts would not combine with the Proposed Action or information could not be located, all of the cumulative projects listed above have the potential of combining impacts with the Proposed Action, as construction schedules would overlap. Therefore, effects of these projects were considered in the cumulative impacts analysis below.

4.15. 10.4Construction, Operation and Maintenance, and Decommissioning

Numerous energy-related development projects, including the proposed OWEF, would adversely affect the viewscape by adding temporary air quality emissions during construction; temporary and permanent structures, fences, and other features that could interrupt landscape views; increased noise caused by equipment required for construction and decommissioning, motor vehicle use, voices, music, or other worker-related sounds. Any of these activities individually or in combination could cause some users to seek out other areas of the desert for their wilderness or recreation activities and experiences. These locations would most likely be in another county where renewable energy development is not prevalent or likely to occur.

Only two projects (ESJ Wind Project I and Imperial Valley Solar – Solar Two) identified within the cumulative project list described above would be developed and operate on a similar magnitude of the proposed OWEF. These projects are located within the general vicinity of the proposed OWEF and would present similar effects to the special designation areas. The Jacumba Wliderness Area borders the proposed OWEF site on the south and may experience effects of a greater magnitude. All other special designation areas generally border or are within close proximity to the proposed OWEF and these cumulative projects, and none of these special designation areas would specifically be affected greater than another.

These potential cumulative impacts on specially-designated wilderness and recreation areas could, in turn, affect visitor attraction to other specially-designated areas within the vicinity of the project area, since the myriad of projects in the cumulative scenario, in combination, would add large- and small-scale industrial, utility-related, and other uses in the region.

Unavoidable impacts to designated wilderness areas would result since construction and operation of the Proposed Action would alter the adjacent scenery to a more industrial setting, as viewed from the special designation areas. Thus, the effects on special designation areas would continue until project facilities are dismantled and the vegetation and landforms of the site are reclaimed. The existing landscape setting would be restored during the decommissioning phase.

These potential impacts are discussed in the Air Quality, Noise, and Visual Resources sections, and mitigation measures for construction, operations and maintenance activities have been proposed to reduce the impacts of the proposed project. Additionally, only two projects (ESJ Wind Project I and Imperial Valley Solar – Solar Two) identified within the cumulative project list described above would be developed and operate on a similar magnitude of the proposed OWEF.

Furthermore, cumulative effects associated with fugitive dust, noise, and visual disturbance would not require any changes to the designations or status of specially designated areas within close proximity to the proposed OWEF. Thus, the proposed OWEF would not contribute substantially to cumulative impacts on special designations.

4.15. 10.5 CEQA Significance Determinations

Appendix G of the State CEQA Guidelines does not provide significance criteria for special designations, except those stated for agriculture and forestry resources. No significance determination has been made.

4.15.11 Mitigation Measures

No mitigation measures are recommended. Please see Sections 4.2 (Air Quality), 4.9 (Noise), and 4.18 (Visual Resources) for a description of mitigation measures that would be implemented to reduce the project's impact to air quality, noise, and visual resources.

4.15.12 Residual Impacts After Mitigation

There would be no unavoidable adverse impacts related to special designations.

4.16 Transportation and Public Access

This section discusses the transportation and public access impacts that would occur with implementation of the Proposed Action and alternatives. Effects may occur from physical changes to roads, construction activities, introduction of construction- or operations-related traffic on local roads, or changes in traffic volumes created by either direct or indirect workforce changes in the area. Information contained within this section was provided primarily by the *Traffic Impact Analysis for the Ocotillo Express Wind Energy Facility, County of Imperial, California*, March 17, 2011, prepared by Linscott, Law, & Greenspan, Engineers (LL&G Engineers) and is included as Appendix H of this EIS/EIR and incorporated by reference herein.

4.16.1 Methodology for Analysis

The operations of the project area intersections and street segments are characterized using the concept of "Level of Service" (LOS). LOS is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A through F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

Table 4.16-1 provides summarized descriptions for each level of service.

Table 4.16-1. Intersection Level of Service Descriptions

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Unsignalized Intersections

For unsignalized intersections, LOS is determined by the computed or measured control delay and is defined for each minor movement. LOS is not defined for the intersection as a whole. Table 4.16-2 depicts the criteria, which are based on the average control delay for any particular minor movement.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits.

LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

Table 4.16–2. Level of Service Thresholds For Unsignalized Intersections

Average Control Delay Per Vehicle (Seconds/Vehicle)			Level of Service	Expected Delay to Minor Street Traffic
0.0	≤	10.0	A	Little or no delay
10.1	to	15.0	B	Short traffic delays
15.1	to	25.0	C	Average traffic delays
25.1	to	35.0	D	Long traffic delays
35.1	to	50.0	E	Very long traffic delays
	≥	50.0	F	Severe congestion

Street Segments

Street segments were analyzed based upon the comparison of Average Daily Traffic (ADT) to the County of Imperial Roadway Classifications LOS and ADT table (Table 4.16-3). Table 4.16-3 provides segment capacities for different general street classifications, based on traffic volumes and roadway characteristics. Segment analysis involves a comparison of ADT volumes and an approximate daily capacity on the subject roadway.

Table 4.16-3. Imperial County Standard Street Classification Average Daily Vehicle Trips

Road		Level of Service W/Average Daily Traffic Volume				
Class	X-Section	A	B	C	D	E
Expressway	128 / 210	30,000	42,000	60,000	70,000	80,000
Prime Arterial	106 / 136	22,200	37,000	44,600	50,000	57,000
Minor Arterial	82 / 102	14,800	24,700	29,600	33,400	37,000
Collector	64 / 84	13,700	22,800	27,400	30,800	34,200
Local Collector	40 / 70	1,900	4,100	7,100	10,900	16,200
Residential Street	40 / 60	*	*	< 1,500	*	*
Residential Cul-de-Sac / Loop Street	40/60	*	*	< 1,500	*	*
Industrial Collector	76 / 96	5,000	10,000	14,000	17,000	20,000
Industrial Local Street	44 / 64	2,500	5,000	7,000	8,500	10,000

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

4.16.1.1 Proposed Project Trip Generation/Distribution/Assignment

Description of Construction /Activities

Proposed project traffic generation was determined for construction, operations and maintenance (O&M), and decommissioning phases based on the intensity of proposed related activities at the project site. The construction phase is expected to commence in the first quarter of 2012, with the entire project completed by the end of 2012. Alternatives 2 and 3 would also be constructed with only one phase lasting approximately 11 months.

Based on the information provided by the Applicant, construction activities include the following types of activities:

- Road/Foundations
- Electrical
- Erection
- Administration/Management
- Post Construction Operations and Maintenance
- Decommissioning

A matrix summarizing the number of employees and construction trucks required for various activities and the duration for which they are needed is included in Appendix H.

Construction Traffic

The following construction-related activities are anticipated to contribute to traffic at the OWEF site during construction:

- A temporary concrete batch plant will be installed to supply concrete for foundations. This will involve transporting water, aggregate, sand and cement to the batch plant.
- Transporting concrete from the batch plant to each turbine location at the project site.
- Transporting gravel/water for the road work.
- Transporting water for the turbine foundations
- Transporting concrete from the batch plant for the construction of the O&M building.
- Deliver specialized equipment such as towers, blades and turbines to each turbine location.
- Miscellaneous delivery and crew trucks.
- Fuel delivery.

Table 4-16-4 summarizes the number of employees and construction trucks required by duration over the entire construction period. The maximum amount of traffic on any given day during the highest intensity is obtained by adding the traffic required for the various overlapping activities during the construction period. As seen in Table 4.16-4, the maximum number of employees required is 297 and the number of trucks required is 130.

Table 4.16-4. Summary of Construction Traffic

Duration	Employees	Duration	Trucks
Week 1 to Week 48	26	Week 1 to Week 48	6
Week 1 to Week 40	120	Week 2 to Week 40	51
Week 14 to Week 40	36	Week 14 to Week 21	8
Week 22 to Week 48	78	Week 22 to Week 37	36
Week 25 to Week 40	22	Week 25 to Week 40	22
Week 1 to Week 3	7	Week 10	12
Week 4 to Week 12	10	Week 25	7
Week 13 to Week 28	15	Week 1 to Week 3	7

Table 4.16-4. Summary of Construction Traffic

Duration	Employees	Duration	Trucks
Week 29 to Week 44	13	Week 4 to Week 12	10
		Week 5 to Week 28	15
		Week 29 to Week 44	13
Maximum	**297**		**130**

Source: Estimated from construction traffic data from Aspen Environmental Group, February 2011.

Operations and Maintenance

One fork lift would be available on site and one crane would be brought on site once a year for maintenance work. Approximately 17 full-time employees for year-round operation and 12 temporary workers for 12 weeks a year are expected to be required for O&M.

Table 4.16-5 summarizes the construction and O&M traffic summarized in Table 4.16-4 and the calculated total employee and truck traffic generated on a daily basis.

Table 4.16-5. Determining Maximum Daily Construction and O&M Traffic

Description	Quantity	Trips	PCE [a]	Equivalent Passenger Cars [b]
Construction				
Trucks [c]	130	260	1.7	442
Employees				
Management [d]	26	4	1.0	104
Construction [e]	234	2	1.0	468
Subtotal Construction Employees	*260*			*572*
Subtotal Daily Construction Traffic	**390**			**1,014**
Operations and Maintenance (O&M)				
Trucks	1	2	1.7	3
Employees	37	2	1.0	74
Subtotal Daily O&M Traffic	**38**			**77**
Total Daily Construction and O&M Traffic	**428**			**1,091**

Footnotes:

a. "Passenger Car Equivalence" (PCE) factor. The surrounding terrain is generally level and the PCE factor is 1.7 for level terrain per Exhibit 20-9 Highway Capacity Manual (HCM).
b. Applying the PCE factor to the truck trips, the passenger car equivalent trips is obtained.
c. Each truck generates two trip ends, one inbound trip to the site and one outbound trip from the site.
d. Each management employee is assumed to generate four trips, 2 trips to and from work and 2 additional trips to the worksite or other destinations during a workday
e. Each construction employee is assumed to generate 2 trips, to and from work.

General Notes:

1. Work hours: 10-hour work days Mondays through Saturdays. May work early morning, evenings or late nights. Construction staff assumed during peak hours to analyze the "worst-case" condition.

The management employees are assumed to generate four trips daily, two trips to and from work and two trips to various work locations during the work day. The construction employees are assumed to generate two trips per day, one trip from home to work and one trip from work back to home at the end of the day.

The traffic associated with the proposed construction activities at the project site includes trucks of varying sizes. Trucks potentially have greater impacts on a roadway network than passenger cars. A passenger-car equivalence factor was applied to the truck traffic to account for this fact. Exhibit 20-9, Passenger-Car Equivalents on Two Way and Directional Segments in the *Highway Capacity Manual, 2000* recommends Passenger Car Equivalence of 1.7 for heavy vehicles on level terrain. Most of the study area is level terrain (Appendix C of Appendix H). Hence, this factor was applied to the truck trips.

Table 4.16-6 summarizes the peak-hour construction traffic. As shown in Table 4.16-6, the construction related traffic is substantially greater than the O&M traffic, which validates the assertion that analysis of the construction impacts would represent the worst-case potential traffic impacts of the project.

The directional split assumed for truck traffic is 50 percent inbound and 50 percent outbound during the a.m. and p.m. peak hours. For employees, a directional split of 90 percent inbound and 10 percent outbound and 10 percent inbound and 90 percent outbound is assumed during the a.m. and p.m. peak hours, respectively. The total construction traffic analyzed in this report is 1,091 ADT, with 341 trips (286 inbound/55 outbound) during the a.m. peak hour, and 341 trips during the p.m. peak hour (55 inbound/286 outbound) during the p.m. peak hour.

Figure 4-16-1 shows the total construction traffic volumes for the Proposed Action.

Trip Distribution

The trip distribution was developed separately for the truck and management/construction employees. Information regarding the source of various construction materials and equipment was obtained from the Draft Plan of Development provided by Pattern Energy dated November 2011. This information was used to develop the potential percentage of construction-related traffic generated by the construction activities, by direction.

Construction Trip Distribution (Trucks)

Based on the sources of various construction materials, the regional distribution of traffic was determined. Table 4.16-7 demonstrates the basis for the distribution percentages that are assumed in this analysis.

The source for road gravel is in Ocotillo, north of I-8 and, hence, the traffic generated by this activity is not expected to utilize the study area roadway segments and intersections. The gravel quarry in Ocotillo is located just south of the project Site 1, north of I-8. The traffic generated by the gravel quarry is 20 percent and therefore localized. Most of the remaining construction materials and equipment (50 percent) are expected to be from sources north or east of the project site. The route to points north is east on I-8 and north on SR 111. Therefore, all traffic to and from points north is also oriented to the east on I-8 at the project site. No truck traffic is anticipated to the south, except to Site 2, at the SR 98 (Yuha Cutoff)/Imperial Highway intersection. The remaining 30 percent is oriented to the west on I-8.

Construction Trip Distribution (Management / Construction Employees)

As seen in Table 4.16-7, it is assumed that 80 percent of the employees (management and construction) are from El Centro and the remaining 20 percent are from San Diego.

4.16.1.2 Project Trip Assignment

Daily and peak-hour project traffic generation for the construction-related truck (with PCE) and employee vehicle traffic shown in Tables 4.16-4 and 4.16-5 were distributed and assigned separately to the local street system based on their respective distribution percentages.

Table 4.16-6. Peak Hour Traffic

A.M. Peak Hour				
Description	**Daily Trips [a]**	**Total**	**Inbound**	**Outbound**
Construction				
Trucks	442	44	22	22
Employees				
Management	104	26	23	3
Construction	468	234	211	23
Subtotal Employee Traffic	*572*	*260*	*234*	*26*
Total A.M. Peak Hour Construction Traffic	**1,014**	**304**	**256**	**48**
Operations and Maintenance				
Trucks	3	0	0	0
Employees	74	37	30	7
Total A.M. Peak Hour O&M Traffic	77	37	30	7
P.M. Peak Hour				
Description	**Daily Trips [a]**	**Total**	**Inbound**	**Outbound**
Construction				
Trucks	442	44	22	22
Employees				
Management	104	26	3	23
Construction	468	234	23	211
Subtotal Employee Traffic	*572*	*260*	*26*	*234*
Total p.m. Peak Hour Construction Traffic	**1,014**	**304**	**48**	**256**
Operations and Maintenance				
Trucks	3	0	0	0
Employees	74	37	7	30
Total p.m. Peak Hour O&M Traffic	**77**	**37**	**7**	**30**

Footnotes:

a. Daily trips in terms of equivalent "Passenger Cars" (Table 4.16-2).
b. Each management employee is assumed to generate four trips, 2 trips to and from work and 2 additional trips to the worksite or other destinations during a workday
c. Each construction employee is assumed to generate 2 trips, to and from work.

General Notes:

1. Work hours: 10-hour work days Mondays through Saturdays. May work early morning, evenings or late nights. Construction staff assumed during peak hours to analyze the "worst-case" condition.

Table 4.16-7. Construction Traffic Distribution Estimate

Description	From	Quantity	Employees [a]				Trucks [a]			
			West	East	North	South	East	West	North	South
Management										
Employees	From El Centro (E) & San Diego (W)	26 Employees	5	21						
Roads/Foundation Construction										
Employees	From El Centro (E) & San Diego (W)	120 Employees	24	96						
Water for Road Maintenance	From Pine Valley (WNW)	8 HHDT [b]						8		
Water for Concrete Foundation	From Pine Valley (WNW)	2 HHDT						8		
Gravel for Roads	From Ocotillo	17 HHDT								17
Concrete Foundation Aggregate	From near Thermal, California	13 HHDT					13			
Concrete Foundation Sand	From Ocotillo	7 HHDT					7			
Concrete Foundation Cement	From Victorville (NNW)	4 HHDT						6		
Electrical										
Employees	From El Centro (E) & San Diego (W)	36 Employees	7	29						
Water for Road Maintenance	From Pine Valley (WNW)	8 HHDT					4	4		
Erection										
Employees	From El Centro (E) & San Diego (W)	78 Employees	16	62						
WTG Delivery	From Texas (E)	18 HHDT					18			
		Total	**52**	**208**	**0**	**0**	**42**	**26**	**0**	**17**
		Calculated Percentages	*20%*	*80%*			*49%*	*31%*	*0%*	*20%*
		Distribution Percentages Adopted for Analysis	**20%**	**80%**			**50%**	**30%**	**0%**	**20%**

Footnotes:

a. Information obtained from Aspen Environmental Group, February 2011.

b. HHDT - Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

4.16.2 CEQA Significance Criteria

The following criteria were used to determine the significance of impacts under CEQA:

Trans-1 *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)*

Trans-2 *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways*

Trans-3 *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks*

Trans-4 *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)*

Trans-5 *Result in inadequate emergency access*

Trans-6 *Result in inadequate parking capacity*

Trans-7 *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)*

For the OWEF, the criterion numbered Trans-3 was determined to be inapplicable or would result in no impact and, therefore, is not addressed further in the impact analysis presented in this section. This criterion was determined to be inapplicable or to result in no impact as the project site would not be located within two miles of a public airport or public use airport that would result in a safety hazard for people residing or working in the project area. There would be no impacts under this criterion from any component of the Proposed Action or alternatives. See Section 4.11, Public Health and Safety, for a discussion of potential impacts related to military aircraft operations in the project area.

4.16.3 Alternative 1: Proposed Action

This analysis of direct and indirect impacts for the Proposed Action is organized according to the following project phases: construction; operation and maintenance; and decommissioning.

4.16.3.1 Direct and Indirect Impacts

Construction

Construction is assumed to commence in 2012. To account for potential project traffic increases that may occur between 2010 (existing) and when the project is expected to commence, a five percent growth factor was applied to all existing 2010 traffic volumes throughout the study area. The project traffic was added to the baseline traffic to obtain the baseline with construction traffic volumes.

Intersection Operations

Table 4.16-8 summarizes the intersection operations throughout the project study area given the "baseline with construction" traffic volumes. This table shows that all of the unsignalized intersections in the study area are forecasted to operate at LOS B or better during the a.m. and p.m. peak hours. Because the addition of project construction traffic would not severely degrade the existing intersections in the project study area, intersection operation and traffic flow would not be adversely affected.

Segment Analysis

Table 4.16-9 summarizes the street segment operations throughout the project study area given the projected Baseline with Construction traffic volumes. This table shows all segments to continue to operate at LOS A or better on a daily basis. Therefore, the addition of project construction traffic would not affect the existing street segments in the project study area.

Based on the traffic analysis performed, all of the un-signalized intersections in the study area are forecasted to operate at LOS B or better during the a.m. and p.m. peak hours. Additionally, all street segments will continue to operate at LOS A or better on a daily basis during construction.

Public Access

Construction of the Proposed Action would temporarily interfere with public access in the project area. Public access such as existing recreational activities would be temporarily disrupted since access to the OWEF site and OHV routes would be restricted during construction. However, after the construction period, access to the site and OHV routes would be restored, so impacts would be temporary.

Nonetheless, Mitigation Measure Lands-2 would require the Applicant to minimize the disturbance of existing land uses and to coordinate with the owners to determine an acceptable solution and fund any necessary avoidance measures or modifications.

Operation and Maintenance

The project is estimated to generate 77 ADT during full operations, 7.5 percent of the 1,014 ADT generated by the construction traffic. During construction, the project is determined to have no adverse impacts at any of the study area intersections or segments. Because operations and maintenance would generate substantially less traffic than construction and because the construction phase of the project would not adversely affect intersection operation or traffic flow, it can be concluded that no adverse impacts would occur due to the traffic generated during the operations and maintenance phase of the project.

Decommissioning

At the end of the life of the project, the wind turbines would be dismantled and removed from the site and the site would be returned to its original condition. Decommissioning activities are assumed to generate no more than the 1,014 ADT as generated by the construction traffic. Since the project is determined to have no adverse impacts at any of the study area intersections or segments during construction, it can be concluded that no adverse impacts would occur due to the traffic generated during the decommissioning phase of the project.

Public Access

Similar to construction of the Proposed Action, decommissioning activities would temporarily interfere with public access in the project area. Public access such as existing recreational activities would be temporarily disrupted since access to the OWEF site and OHV routes would be restricted during decommissioning. However, after decommissioning activities, access to the site and OHV routes would be restored, so impacts would be temporary.

Nonetheless, Mitigation Measure Lands-2 would require the Applicant to minimize the disturbance of existing land uses and to coordinate with the owners to determine an acceptable solution and fund any necessary avoidance measures or modifications.

4.16.3.2 CEQA Significance Determinations

Significance determinations for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.16.2. Only those significance criteria which were determined in Section 4.16.2 to be relevant to the project are addressed below.

- **Trans-1.** Under Trans-1, a significant impact would occur if the increase in project traffic causes any intersection to operate at LOS D or worse condition during the a.m. or p.m. peak hours, or any segment to operate at LOS D or worse conditions on a 24-hour basis. Based on the analysis presented above, the LOS levels of neither study area intersections nor street segments would change substantially and they would not operate at LOS D or worse. Only two intersections change LOS levels from LOS A to LOS B as a result of temporary construction activities; therefore, impacts are considered less than significant.
- **Trans-2.** There is no formal congestion management plan for Imperial County. Imperial County considers an impact to be significant if a proposed project causes any intersection or street segment to operate at LOS D or worse. The project traffic does not exceed the LOS standards because all segments operate at LOS B or better; therefore, impacts are considered less than significant.
- **Trans-4.** The project would not result in an increase in hazards due to a design feature. Project construction would not involve any roadway design elements except for access road turnouts to the project site. Construction-related truck traffic could potentially obstruct traffic on local public streets; however, with implementation of a traffic management plan as required by BLM, adequate sight distance would be ensured at these access driveways for trucks to exit the project site without obstructing traffic on public streets. Therefore, impacts would be less than significant. Other potential project hazards are also discussed in Section 3.11 and impacts related to hazards are discussed in Section 4.11.
- **Trans-5.** With implementation of a traffic management plan as required by BLM, adequate emergency access would be maintained during project construction and impacts would be less than significant.
- **Trans-6.** Adequate parking would be provided for construction equipment and employees; therefore, impacts would be less than significant.
- **Trans-7.** The project would not conflict with any adopted policies, plans, or programs supporting alternative transportation.

Table 4.16-8. Near-Term Intersection Operations

Intersection	Control Type	Peak Hour	Baseline Without (Construction) Project Traffic		Baseline + Project Traffic			Baseline + Construction Traffic + Cumulative Projects Traffic		
			Delay[a]	LOS[b]	Delay	LOS	Δ[c] Delay	Delay	LOS	Δ[c] Delay
West Evan Hewes Highway / Imperial Highway	MSSC[d]	a.m.	9.8	A	10.4	B	0.6	10.4	B	0.0
		p.m.	9.8	A	10.7	B	0.9	11.5	B	0.8
I-8 WB Ra.m.ps / Imperial Highway	MSSC	a.m.	9.2	A	9.8	A	0.6	9.8	A	0.0
		p.m.	9.1	A	9.4	A	0.3	10.1	A	0.7
I-8 EB Ra.m.ps / Imperial Highway	MSSC	a.m.	9.4	A	9.8	A	0.4	9.9	A	0.1
		p.m.	11.1	B	13.5	B	2.4	13.8	B	0.3
SR 98 (Yuha Cutoff) / Imperial Highway	MSSC	a.m.	8.8	A	8.8	A	0.0	9.5	A	0.7
		p.m.	9.0	A	9.1	A	0.1	10.0	A	0.9

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to Project / Cumulative projects
d. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

UNSIGNALIZED

Delay	LOS
0.0 < 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
> 50.1	F

Table 4.16-9. Construction Year Street Segment Operations

Street Segment	Roadway Classification [a]	Existing Capacity (LOS E)[b]	Baseline Without (Construction) Project Traffic			Existing + (Construction) Project Traffic				Existing + Project + Cumulative Projects Traffic			
			ADT [c]	V/C [d]	LOS [e]	ADT	V/C	LOS	Δ[f]	ADT	V/C	LOS	Δ[f]
W. Evan Hewes Highway East of Imperial Highway	2-Lane Collector	16,200	260	0.016	A	1,240	0.077	A	0.061	1,240	0.077	A	0.000
Imperial Highway I-8 EB Ramps to SR-98 Yuha Cutoff	2-Lane Collector	16,200	250	0.015	A	360	0.022	A	0.007	480	0.030	A	0.008
SR-98 Yuha Cutoff West of Imperial Highway	2-Lane Collector	16,200	1,200	0.074	A	1,310	0.081	A	0.007	1,490	0.092	A	0.011

Footnotes:

a. County of Imperial Valley roadway classification
b. Roadway capacity corresponding to Level of Service E from Imperial County Standard Street Classification, Average Daily Vehicle Trips table.
c. Average Daily Traffic volumes
d. Volume / Capacity ratio.
e. Level of Service
f. Increase in V/C ratio due to project traffic

4.16.4 Alternative 2: 137 Wind Turbine Generators

4.16.4.1 Direct and Indirect Impacts

Alternative 2 would utilize the same materials and equipment as the Proposed Action (Alternative 1), and would be constructed in 11 months. Therefore, the intensity of traffic per day would be basically the same as in the Proposed Action.

Construction

As concluded in the Construction Year Analysis for the Proposed Action, no adverse impacts were identified. Therefore, no adverse impacts would occur during the construction of Alternative 2, which is forecasted to generate equal or lesser traffic for a shorter duration than the Proposed Action.

Similar to Alternative 1, construction of Alternative 2 would temporarily interfere with public access to the project area.

Operation and Maintenance

Similar to Alternative 1, the project would have no adverse impacts at any of the study area intersections or segments during construction. Because operations and maintenance would generate substantially less traffic than construction and because the construction phase of the project would not adversely affect intersection operation or traffic flow, it can be concluded that no adverse impacts would occur due to the traffic generated during the operations and maintenance phase of the project.

Decommissioning

At the end of the life of the project, the wind turbines would be dismantled and removed from the site and the site would be returned to its original condition. Because the project would have no adverse impacts at any of the study area intersections or segments during construction, it can be concluded that no adverse impacts would occur due to the traffic generated during the decommissioning phase of the project.

4.16.4.2 CEQA Significance Determinations

Significance determinations for the impacts identified for each phase of Alternative 2 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.16.2. Only those significance criteria which were determined in Section 4.16.2 to be relevant to Alternative 2 are addressed below.

- **Trans-1.** Under Trans-1, a significant impact would occur if the increase in project traffic causes any intersection to operate at LOS D or worse condition during the a.m. or p.m. peak hours, or any segment to operate at LOS D or worse conditions on a 24-hour basis. With the greater material needs for Alternative 1, the LOS levels neither study area intersections nor street segments would change substantially and they not operate at LOS D or worse. Only two intersections change LOS levels from LOS A to LOS B as a result of temporary construction activities; therefore, impacts related to Alternative 2, which is smaller project than Alternative 1, would be less than significant.
- **Trans-2.** There is no formal congestion management plan for Imperial County. Imperial County considers an impact to be significant if a proposed project causes any intersection or street segment to

operate at LOS D or worse. Traffic related to Alternative 1 would not exceed the LOS standards because all segments operate at LOS B or better; therefore, impacts from Alternative 2, which is a smaller project than Alternative 1, would be less than significant.

- **Trans-4.** Alternative 2 would not result in an increase in hazards due to a design feature. Construction of Alternative 2 would not involve any roadway design elements except for access road turnouts to the project site. Construction-related truck traffic could potentially obstruct traffic on local public streets; with implementation of a traffic management plan as required by BLM, adequate sight distance would be ensured at these access driveways for trucks to exit the project site without obstructing traffic on public streets. Therefore, impacts would be less than significant. Other potential project hazards are also discussed in Section 3.11 and impacts related to hazards are discussed in Section 4.11.
- **Trans-5.** With implementation of a traffic management plan as required by BLM, adequate emergency access would be maintained during project construction and impacts would be less than significant.
- **Trans-6.** Adequate parking would be provided for construction equipment and employees; therefore, impacts would be less than significant.
- **Trans-7.** The project would not conflict with any adopted policies, plans, or programs supporting alternative transportation.

4.16.5 Alternative 3: 105 Wind Turbine Generators

4.16.5.1 Direct and Indirect Impacts

Alternative 3 would utilize the same materials and equipment as the Proposed Action (Alternative 1), and would be constructed in 11 months. Therefore, the intensity of traffic per day would be basically the same or less than the Proposed Action. In Alternative 3, no turbines would be built in Site 2 and, hence, there would be no construction related traffic at the following facilities:

- SR 98 / Imperial Highway intersection
- Segment of Imperial Highway between I-8 EB ramps and SR 98
- Segment of SR 98 west of Imperial Highway

Construction

As concluded in the Construction Year Analysis for the Proposed Action, no adverse impacts were identified. Therefore, it may be concluded that no adverse impacts would occur during the construction of Alternative 3, which is forecasted to generate equal or lesser traffic for a shorter duration than the Proposed Action.

Similar to Alternatives 1 and 2, construction of Alternative 3 would temporarily interfere with public access to the project area.

Operation and Maintenance

Similar to Alternatives 1 and 2, the project would have no adverse impacts at any of the study area intersections or segments during construction. Because operations and maintenance would generate substantially less traffic than construction and because the construction phase of the project would not adversely affect intersection operation or traffic flow, it can be concluded that no adverse impacts would occur due to the traffic generated during the operations and maintenance phase of the project.

Decommissioning

At the end of the life of the project, the wind turbines would be dismantled and removed from the site and the site would be returned to its original condition. Because the project would have no adverse impacts at any of the study area intersections or segments during construction, it can be concluded that no adverse impacts would occur due to the traffic generated during the decommissioning phase of the project.

4.16.5.2 CEQA Significance Determinations

Significance determinations for the impacts identified for each phase of Alternative 3 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.16.2. Only those significance criteria which were determined in Section 4.16.2 to be relevant to Alternative 3 are addressed below.

- **Trans-1.** Under Trans-1, a significant impact would occur if the increase in project traffic causes any intersection to operate at LOS D or worse condition during the a.m. or p.m. peak hours, or any segment to operate at LOS D or worse conditions on a 24-hour basis. With the greater material needs for Alternative 1, the LOS levels neither study area intersections nor street segments would change substantially and they not operate at LOS D or worse. Only two intersections change LOS levels from LOS A to LOS B as a result of temporary construction activities; therefore, impacts related to Alternative 3, which is smaller project than Alternative 1, would be less than significant.
- **Trans-2.** There is no formal congestion management plan for Imperial County. Imperial County considers an impact to be significant if a proposed project causes any intersection or street segment to operate at LOS D or worse. Traffic related to Alternative 1 would not exceed the LOS standards because all segments operate at LOS B or better; therefore, impacts from Alternative 3, which is a smaller project than Alternative 1, would be less than significant.
- **Trans-4.** Alternative 3 would not result in an increase in hazards due to a design feature. Construction of Alternative 3 would not involve any roadway design elements except for access road turnouts to the project site. Construction-related truck traffic could potentially obstruct traffic on local public streets; with implementation of a traffic management plan as required by BLM, adequate sight distance would be ensured at these access driveways for trucks to exit the project site without obstructing traffic on public streets. Therefore, impacts would be less than significant. Other potential project hazards are also discussed in Section 3.11 and impacts related to hazards are discussed in Section 4.11.
- **Trans-5.** With implementation of a traffic management plan as required by BLM, adequate emergency access would be maintained during project construction and impacts would be less than significant.
- **Trans-6.** Adequate parking would be provided for construction equipment and employees; therefore, impacts would be less than significant.

- **Trans-7.** The project would not conflict with any adopted policies, plans, or programs supporting alternative transportation.

4.16.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.16.6.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would not amend the California Desert Conservation Area (CDCA) Plan. As a result, no wind energy project would be constructed, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Land Use Plan of 1980, as amended. No action would occur and existing conditions relevant to transportation and public access would continue. No impacts associated with the Proposed Action would occur. The land on which the project is proposed would become available to other uses that are consistent with the BLM's land use plan, including another wind project requiring a land use plan amendment. In addition, in the absence of this project, other renewable energy projects could be constructed to meet state and federal mandates.

Intersection Analysis

As summarized in Table 4.16-8, the intersection operations throughout the project study area given the Baseline without Construction traffic volumes. This table shows that all of the unsignalized intersections in the study area are forecasted to continue to operate at LOS A or better during the a.m. and p.m. peak hours with the 5 percent adjustment to 2012 volumes included.

Segment Analysis

Table 4.16-9 summarizes the street segment operations throughout the project study area given the projected Baseline without Construction traffic volumes. This table shows all segments continue to operate at LOS A or better on a daily basis.

4.16.6.2 CEQA Significance Determinations

Alternative 4 would not result in impacts to transportation and public access.

4.16.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development

4.16.7.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to make the proposed site unavailable for future wind energy development. As a result, no wind energy project would be constructed on the site, and the BLM would continue to manage the site consistent with the existing land use designation in the CDCA Land Use Plan of 1980, as amended. No project would occur and no future development of the project site for wind energy would occur. Existing conditions relevant to transportation and public access would continue, but may be altered at some point in the future by construction of a potential project other than wind energy development. No impacts associated with the Proposed Action would occur. However, in the absence of this project, other renewable energy projects may be constructed to meet state and federal mandates, and those projects would have similar impacts in other locations.

Intersection Analysis

As summarized in Table 4.16-8, the intersection operations throughout the project study area given the Baseline without Construction traffic volumes. This table shows that all of the unsignalized intersections in the study area are forecasted to continue to operate at LOS A or better during the a.m. and p.m. peak hours with the 5 percent adjustment to 2012 volumes included.

Segment Analysis

Table 4.16-9 summarizes the street segment operations throughout the project study area given the projected Baseline without Construction traffic volumes. This table shows all segments continue to operate at LOS A or better on a daily basis.

4.16.7.2 CEQA Significance Determinations

Alternative 5 would not result in impacts to transportation and public access.

4.16.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development

4.16.8.1 Direct and Indirect Impacts

Under this alternative, the BLM would not approve the proposed OWEF and would amend the CDCA Plan to allow for other wind projects on the site. As a result, it is possible that another wind energy project could be constructed on the site. No project would occur but the area would be available to wind power development in the future. No impacts associated with the Proposed Action would occur. In the future, if another wind development project is implemented, similar impacts to transportation and public access as those described for the proposed OWEF could occur.

Intersection Analysis

As summarized in Table 4.16-8, the intersection operations throughout the project study area given the Baseline without Construction traffic volumes. This table shows that all of the unsignalized intersections in the study area are forecasted to continue to operate at LOS A or better during the a.m. and p.m. peak hours with the 5 percent adjustment to 2012 volumes included.

Segment Analysis

Table 4.16-9 summarizes the street segment operations throughout the project study area given the projected Baseline without Construction traffic volumes. This table shows all segments continue to operate at LOS A or better on a daily basis.

4.16.8.2 CEQA Significance Determinations

Alternative 6 would not result in impacts to transportation and public access.

4.16.9 Cumulative Impacts

4.16.9.1 Geographic Extent/Context

For the purposes of the cumulative analysis of transportation and access impacts, only other projects that make a substantial contribution to traffic at the same intersections and street segments as the Proposed Action are considered. Because the volume of traffic generated during construction would not be particularly large and would be substantially less during O&M, only intersections and street segments in close proximity to the OWEF site would experience any appreciable increase in traffic. Therefore, the study area for cumulative impacts consists of the immediate vicinity of the proposed OWEF site where other projects might contribute traffic to the same intersections and street segments.

4.16.9.2 Existing Cumulative Conditions

Substantial east-west regional traffic passes through the Ocotillo/Nomirage area on I-8, which connects the San Diego area with El Centro, Yuma, and points further east. Existing traffic on local roadways is substantially less than I-8 as described in Section 3.17. Local highways and thoroughfares in the project area include Evan Hewes Highway (County Route S80), Imperial Highway (County Highway S2), and SR 98 (Yuha Cutoff). A wide variety of activities and development contribute to the current cumulative conditions for transportation and public access in the project area, including residential, commercial, and industrial development in the local area and, due to the presence of I-8, in the larger region. Recreational activities in the local area, as well as nearby areas such Anza-Borrego Desert State Park, also contribute to cumulative traffic and transportation conditions. These types of past and ongoing projects and activities would combine with traffic generated by the Proposed Action or an alternative to affect transportation and public access within the vicinity of the OWEF site.

4.16.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR.

Only one project identified in Table 4.1-1 has the potential to result in transportation and public access impacts that could combine with similar impacts of the proposed OWEF. Therefore, this project was used to develop the analysis of cumulative effects for transportation and public access:

- **Coyote Wells Specific Plan (Wind Zero Group, Inc.).** The Specific Plan includes 22 parcels and 10 land use designations, and would be comprised of two main components, the open space/recreational area and the open space/preservation area. Other land uses within these areas include tourism, residential, storage, hotel/resort, and infrastructure.

A review of the traffic impact analyses prepared for other projects in the vicinity of the OWEF revealed that only the construction of Phase 1 of the Coyote Wells Specific Plan would affect the same roadway intersections as construction of the proposed OWEF. This included a review of the traffic analyses for several projects that might be constructed concurrently with the proposed OWEF, including the Imperial Valley Solar Project, Imperial Solar Energy Center – South, and Imperial Solar Energy Center – West. While construction of these projects would not adversely affect the same intersections as the proposed OWEF, they would all add truck traffic to I-8 during construction, primarily those segments of I-8 east of Ocotillo. However, the cumulative traffic analyses prepared for these solar projects indicate that the segments of I-8 east of Ocotillo would still operate at LOS A or B during construction and, therefore, would not result in congestion or delays along I-8.

For these reasons, the most reasonably foreseeable project that is expected to most likely contribute to impacts along with the Proposed Action and alternatives is the Coyote Wells Specific Plan. Potential impacts from the Coyote Wells Specific Plan in conjunction with the Proposed Action and alternatives are discussed below.

4.16.9.4 Construction

The Coyote Wells Specific Plan is expected to add traffic to project area intersections in the construction timeframe of the project (Year 2012). The Coyote Wells Specific Plan is estimated to ultimately generate a total of 4,591 Average Daily Trips (ADT). However, the project is not expected to be completed within the next couple of years, which is the timeframe for the construction phase of the OWEF. Therefore, only traffic generated by Phase I of the Coyote Wells project is considered in determining cumulative impacts from both projects together. Implementation of Phase I of the Coyote Wells Specific Plan is estimated to generate a total of 538 Average Daily Trips (ADT) with 134 trips during the a.m. peak hour (102 inbound and 32 outbound) and 134 trips during the p.m. peak hour (32 inbound and 102 outbound trips). As seen in Tables 4.16-8 and 4.16-9, with the addition of the cumulative projects traffic to the existing and OWEF traffic,

All study area intersections are calculated to operate at LOS B or better during the a.m. and p.m. peak hours and all study area segments would continue to operate at LOS A or better on a daily basis. Traffic related to the proposed OWEF does not exceed the LOS standards because all segments operate at LOS B or better; therefore, the project would not make a significant contribution to cumulative impacts.

4.16.9.5 Operation and Maintenance

Implementation of Phase I of the Coyote Wells Specific Plan is estimated to generate a total of 538 Average Daily Trips (ADT) with 134 trips during the a.m. peak hour (102 inbound and 32 outbound) and 134 trips during the p.m. peak hour (32 inbound and 102 outbound trips). However, because operations and maintenance of the OWEF would generate substantially less traffic than construction and because the construction phase of the project would not adversely affect intersection operation or traffic flow, it can be concluded that no adverse impacts would occur due to the traffic generated during the operations and maintenance phase of the project and would not make a significant contribution to cumulative impacts.

4.16.9.6 Decommissioning

The timeframe for decommissioning is unknown at this time; therefore, it is difficult to ascertain what potential future projects which at this time are not reasonably foreseeable could either be in construction or operation at that time that could potentially affect transportation and public access. Because no substantial adverse impacts are anticipated from construction of the Proposed Action and alternatives, no adverse impacts are expected from decommissioning, which generate similar or less traffic than project construction. Therefore, the project is not expected to make a substantial contribution to cumulative traffic impacts during decommissioning.

4.16.9.7 CEQA Significance Determinations

- **Trans-1.** Under Trans-1, a significant impact would occur if the increase in project traffic causes any intersection to operate at LOS D or worse condition during the a.m. or p.m. peak hours, or any segment to operate at LOS D or worse conditions on a 24-hour basis. With increased materials needed for Alternative 1, neither study area intersections nor street segments change LOS levels substantially and none would operate at LOS D or worse. Only two intersections would change LOS levels from LOS A to LOS B as a result of temporary construction activities, and no intersections would experience LOS changes as a result of O&M activities. Therefore, the proposed OWEF would not make a significant contribution to increased traffic volumes that could affect street system capacity. The proposed project's incremental contribution to cumulative impacts on Transportation and Public Access would not be significant.
- **Trans-2.** There is no formal congestion management plan for Imperial County. Imperial County considers an impact to be significant if a proposed project causes any intersection or street segment to operate at LOS D or worse. Traffic related to the proposed OWEF does not exceed the LOS standards because all segments operate at LOS B or better; therefore, the project would not make a significant contribution to roadway levels of service and cumulative impacts on Transportation and Public Access would not be significant.
- **Trans-4.** The proposed OWEF would not result in an increase in hazards due to a design feature. Construction does not involve any roadway design elements except for access road turnouts to the project site. While construction-related truck traffic could potentially obstruct traffic on local public streets on a local basis, with implementation of a traffic management plan and other best management practices (BMPs) discussed below, adequate sight distance would be ensured at access driveways for trucks to exit the project site without obstructing traffic on public streets. Therefore, the proposed project's incremental contribution to cumulative impacts would not be significant.
- **Trans-5.** With implementation of a traffic management plan and other BMPs discussed below, adequate emergency access would be maintained during project construction and the project would not contribute to any cumulative impacts related to emergency access.
- **Trans-6.** Adequate parking would be provided for construction equipment and employees; therefore, the project would not contribute to cumulative parking impacts.
- **Trans-7.** The project would not conflict with any adopted policies, plans, or programs supporting alternative transportation.

4.16.10 Mitigation Measures

The OWEF would implement recommended BMPs from BLM's Wind Programmatic EIS, which were adopted as part of the proposed Wind Energy Development Program to reduce potential traffic impacts (BLM, 2005).

BLM Best Management Practices

- A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. Under this plan, informational signs would be used to inform the public of temporary traffic hazards, flaggers would be employed when equipment would block throughways, and traffic cones would be used to identify any temporary changes in lane configuration necessary to minimize traffic impacts. This plan would be submitted to the BLM and Imperial County Department of Public Works for review and approval.
- A transportation plan shall be developed, particularly for the transport of turbine components, main assembly cranes, and other large pieces of equipment that may be necessary to complete the project. The plan shall consider specific object sizes, weights, origin, destination, and unique handling requirements and shall evaluate alternative transportation approaches. Once a transportation approach is selected, the procedures outlined in the California Department of Transportation Permits Manual would be followed if applicable. In addition, the process that would be used to comply with any unique state requirements and to obtain the required permits or variances would be clearly identified and followed. This plan would be submitted to the BLM and Imperial County Department of Public Works for review and approval, and would be in place prior to the transportation of any turbine components
- Project personnel and contractors shall be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions, to ensure safe and efficient traffic flow and to reduce wildlife collisions and disturbance and airborne dust.
- Traffic shall be restricted to the roads developed for the project. Use of other unimproved roads shall be restricted to emergency situations.
- Signs shall be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimize impacts on local commuters, consideration shall be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute time.
- Ongoing ground transportation planning shall be conducted to evaluate road use, minimize traffic volume, and ensure that roads are maintained adequately to minimize associated impacts.

Project-Specific Mitigation Measures

No project-specific mitigation measures are proposed related to Transportation and Public Access.

4.16.11 Residual Impacts After Mitigation

No unavoidable adverse impacts would occur related to transportation and public access.

4.17 Vegetation Resources

4.17.1 Methodology for Analysis

Effects to these vegetation resources are classified as direct or indirect. Direct effects are those caused by an action and occurring at the same time and place (for example, removal of vegetation through grubbing or grading; [40 C.F.R. 1508.8(a)]). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (e.g., fugitive dust from grading can settle on remaining vegetation and degrade the health of the vegetation over time; [40 C.F.R. 1508.8(b)).

Effects analyses also characterize effects to vegetation resources as temporary or permanent, with a permanent effect referring to areas that are paved or otherwise precluded from restoration, and a temporary effect referring to areas that can be restored to a pre-project state. It should be noted that some temporarily affected areas may be considered permanently affected if the revegetation criteria described below are not met. Temporary disturbance would result from batch plant/laydown area, rail unloading area, trenching for the underground collection circuits, construction access roads, and turbine assembly areas. Permanent disturbance would be a result from the footings and permanent access pad at each WTG, a network of 20-foot-wide roads that would provide access to each WTG, four permanent meteorological towers, biological observation tower, substation/switchyard, and operations and maintenance (O&M) building.

4.17.2 CEQA Significance Criteria

The Proposed Action would have a significant impact on vegetation resources pursuant to CEQA if it would:

V-1 *Have a substantial adverse effect, either directly, or through habitat modifications on any species listed as rare, threatened, or endangered, or any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations or by the BLM, CDFG, or the USFWS;*

V-2 *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the CDFG or USFWS;*

V-3 *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;*

V-4 *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or*

V-5 *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

Where the Proposed Action occurs on federal lands, it would not conflict with local policies or ordinances protecting biological resources (Significance Criterion V-4) since the county has no jurisdiction over federal lands (Imperial County, 1993). Where the Proposed Action occurs on non-federal lands, it would be consistent with the Imperial County General Plan's Land Use and Conservation and Open Space elements as discussed in Section 4.6.3 (Imperial County, 1993) and Land Use Ordinance (Imperial County, 2009).

Similarly, the Proposed Action would not conflict with the provisions of an approved local, regional, or state habitat conservation plan (Significance Criterion V-5) since no such plan is applicable to the proposed OWEF site. As a result, Significance Criteria V-4 and V-5 are not considered further in this Section.

4.17.3 Alternative 1: Proposed Action

4.17.3.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts covers construction of 156 WTGs, O&M, and decommissioning of the Proposed Action.

Construction

Vegetation Communities

Construction activities associated with the Proposed Action would result in direct temporary and permanent losses of native vegetation (Figure 4.17-1). These losses would occur through vegetation clearing, grading, or other surface disturbance (e.g., driving over vegetation). In the desert ecosystems, the definition of permanent impacts needs to reflect the slow recovery rates of its plant communities. Natural recovery rates from disturbance to these ecosystems depend on the nature and severity of the impact. For example, creosote bush can re-sprout a full canopy within five years after damage from heavy vehicle traffic (Gibson et al., 2004), but more severe damage involving vegetation removal and soil disturbance can take over a decade or more to fully recover. Other less-resilient species subjected to damage from heavy vehicle traffic are likely to die from such treatment, either immediately or over time.

Table 4.17-1 presents the temporary and permanent direct impacts to vegetation communities/land covers from construction of the Proposed Action. The total area estimated for use by the Proposed Action (including short-term disturbance) is approximately 655.4 acres within the approximately 12,435.6-acre project area. The 655.4-acre total impact area includes 9.8 acres of impacts that occurs off-site (i.e., the underground collection system and access road between Sites 1 and 2; Figure 4.17-1).

Sixteen vegetation communities, three natural land cover types (badland/mudlands, rock/large boulder outcrop, streambed), and three altered land cover types occur within the proposed OWEF site. The Proposed Action would result in direct impacts to 14 of the 16 vegetation communities (allscale scrub, brittle bush scrub, cheesebush scrub, creosote bush scrub, creosote bush-brittle bush scrub, creosote bush-white bursage scrub, desert agave scrub, fourwing saltbush scrub, mesquite thicket, smoke tree woodland, streambed, teddy bear cholla scrub, white bursage scrub, and Wolf's cholla scrub), one of the three natural land cover types (badland/mudlands), and the three altered land cover types (developed, disturbed habitat, and railroad (Table 4.17-1). Eight of the 22 vegetation communities are considered sensitive vegetation communities according to the CDFG (2010; the rarity ranking of which can be found in Table 4.17-1), including big galleta grass shrub-steppe, brittle bush scrub, desert agave scrub, desert lavender scrub, mesquite thicket, smoke tree woodland, teddy bear cholla scrub, and white bursage scrub. The Proposed Action would result in direct impacts to 5.9 acres of brittle bush scrub, 7.4 acres of desert agave scrub, less than 0.1 acre of mesquite thicket, 11.8 acres of smoke tree woodland, 50.0 acres of

Table 4.17-1. Temporary and Permanent Direct Impacts to Vegetation Communities (acre[s])[1]

Vegetation Community/Land Cover[1]	Existing	Rarity Ranking	Alternative 1			Alternative 2			Alternative 3		
			Impacts		Avoided	Impacts		Avoided	Impacts		Avoided
			Temporary	Permanent		Temporary	Permanent		Temporary	Permanent	
Allscale Scrub	128.1	S4	5.9	1.6	120.6	4.5	1.5	122.1	0	0	128.1
Badlands and Mudhills[2, 3]	162.0	--	0.7	0.1	161.2	0.7	0.1	161.2	0.1	0	161.9
Big Galleta Grass Shrub-steppe	1.9	S2	0	0	1.9	0	0	1.9	0	0	1.9
Brittle Bush Scrub	92.9	S4	4.5	1.4	87	2.5	0.8	89.6	0.4	0	92.5
Cheesebush Scrub	1,095.6	S4	40.7	13.4	1041.5	39.7	13.2	1042.7	30.7	10.2	1054.7
Creosote Bush Scrub	938.9	S5	33.2	7.8	897.9	30.4	7.2	901.3	5.3	0.9	932.7
Creosote Bush-Brittle Bush Scrub	2,280.1	S4	86.2	18.0	2175.8	82.4	16.9	2180.8	52.8	9.9	2217.4
Creosote Bush-White Bursage Scrub	5,877.3	S5	259.6	87.0	5530.7	240.8	83.4	5553.1	220.9	78.6	5577.8
Desert Agave Scrub	248.5	S3	5.6	1.8	241.1	3.6	1.4	243.5	3.6	1.4	243.5
Desert Lavender Scrub	3.9	S3	0	0	3.9	0	0	3.9	0	0	3.9
Developed[2, 4]	82.9	--	6.7	1.2	75.0	6.3	1.1	75.5	4.7	1.1	77.1
Disturbed Habitat[2, 4]	7.6	--	0.1	0	7.5	0.1	0	7.5	0.1	0	7.5
Fourwing Saltbush Scrub	6.5	S4	<0.1	<0.1	6.5	<0.1	<0.1	6.5	0	0	6.5
Mesquite Thicket	0.8	S3.2	<0.1	0	0.8	<0.1	0	0.8	0	0	0.8
Ocotillo Tall Scrub[2]	23.5	--	0	0	23.5	0	0	23.5	0	0	23.5
Railroad[2, 4]	12.5	--	0.1	0.1	12.3	0.1	0.1	12.3	0.1	0.1	12.3
Rock/Large Boulder Outcrop[2, 3]	4.8	--	0	0	4.8	0	0	4.8	0	0	4.8
Smoke Tree Woodland	380.9	S3	8.9	2.9	369.1	8.9	2.9	369.1	6.6	2.8	371.5
Streambed[2, 3]	15.3	--	0.2	0	15.1	0.2	0	15.1	0.2	0	15.1
Teddy Bear Cholla Scrub[5]	663.0	S3	32.9	17.1	613	32.9	17.1	613.0	31.0	16.8	615.2
White Bursage Scrub	176.2	S4	6.0	0.5	169.7	6.0	0.5	169.7	5.5	0.4	170.3
Wolf's Cholla Scrub[2]	232.3	--	7.7	2.6	222.0	7.7	2.6	222.0	7.7	2.6	222.0
TOTAL	**12,435.6**		**499.1**	**155.5**	**11,780.8**	**466.8**	**148.5**	**11,820.3**	**369.7**	**124.6**	**11,941.3**

[1] Vegetation mapping was done to the alliance level. It should be noted that the vegetation communities listed in the Manual of California Vegetation and discussed in this section are referred to by the less formal name. For example, in the Manual of California Vegetation "allscale scrub" is formally referred to as "*Atriplex polycarpa* Shrubland Alliance."

[2] Not listed in the Manual of California Vegetation (Sawyer, Keeler-Wolf, and Evans, 2009).

[3] Natural land cover.

[4] Altered land cover

[5] Listed in the Manual of California Vegetation as teddy bear cholla patches.

teddy bear cholla scrub, and 6.5 acres of white bursage scrub. Impacts to these sensitive vegetation communities would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*). No impacts to big galleta grass shrub-steppe or desert lavender scrub are anticipated.

Construction activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways would result in indirect impacts to vegetation from increased levels of blowing dust that may settle on surrounding vegetation. Increased levels of dust on plants can affect plants' photosynthetic capabilities, affect their productivity and nutritional qualities, and degrade the overall vegetation community. For example, the maximum rate of net photosynthesis of plants that received fine dust particulates was reduced to 21 percent of those of control plants in resinous leaflets of creosote bush, to 44 percent in resinous leaves and photosynthetic stems of cheesebush, and to 58 percent in non-resinous leaves of fourwing saltbush, which have vesiculated trichomes (small sac like hairs; Sharifi et al., 1997). Plants of all three species that received fine dust particulates showed reduced maximum leaf conductance, transpiration, and instantaneous water-use efficiency (Sharifi et al., 1997). Construction activities would also result in direct and indirect impacts to vegetation communities through soil erosion, which can accelerate the loss of nutrients in the soil and reduce the amount of nutrients available to plants in those vegetation communities (Okin et al., 2001). Impacts from fugitive dust would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), and Air-1 (*Implement a fugitive dust control plan*).

Special Status Plant Species

The Proposed Action would result in impacts to individuals or populations of 6 of the 12 special status plant species documented within the rare plant survey area: Harwood's milk-vetch, brown turbans, deboltia, Wolf's cholla, long-lobed four o'clock, and Thurber's pilostyles (Table 4.17-2). No impacts to little San Bernardino Mountains linanthus, Haydon's lotus, Mountain Springs bush lupine, hairy stick-leaf, or desert unicorn plant are anticipated. Special status plant species and project impacts are shown in Figure 4.17-2.

As discussed in Section 3.18.1.3, CRPR 1A plants are "presumed extinct in California," CRPR 1B and 2 plants are "rare or endangered in California," CRPR 3 plants requires more information, and CRPR 4 plants are "needs monitoring for changes in population status." A more detailed explanation of the status codes can be found in Appendix F of the biological technical report, which is Appendix D to this document.

Harwood's milk-vetch (CRPR 2.2) – the Proposed Action would permanently impact two individual plants (approximately 6 percent of the plants documented in the special status plant survey area) in the northeast corner of Site 1 as a result of a construction area associated with a WTG. Several other individual plants were documented in this area, but their locations occur outside of the proposed work areas. The location documented in Devil's Canyon, outside of the Proposed Action boundary, would not be impacted.

Table 4.17-2. Direct Impacts to Special Status Plant Species

Species	Existing Numbers of Individuals*	Alternative 1			Alternative 2			Alternative 3		
		Impacts to Individuals		Percent of Total # Individuals Impacted**	Impacts to Individuals		Percent of Total # Individuals Impacted*	Impacts to Individuals		Percent of Total # Individuals Impacted*
		Temporary Impact Areas	Permanent Impact Areas		Temporary Impact Areas	Permanent Impact Areas		Temporary Impact Areas	Permanent Impact Areas	
Harwood's milk-vetch	32	0	2	6	0	2	6	0	0	0
Brown turbans	846,173	46,420	12,617	7	39,209	12,131	6	0	0	0
Deboltia	557	1	3	<1	1	3	3	1	3	<1
Wolf's cholla	24,735	1,286	408	7	1,091	340	6	1,091	340	6
Long-lobed four o'clock	308	0	11	4	0	10	3	0	0	0
Thurber's pilostyles	318	13	5	6	13	5	6	13	5	6

*Existing number of individuals documented within the special status plant species survey areas, which did not include the entire 12,435-acre project area. The actual population size within the project area for most of these species is expected to be larger than the numbers reported in this table.

**Percent rounded

Brown turbans (CRPR 2.3) – the Proposed Action would impact approximately 59,037 individual plants (approximately 7 percent of the plants documented in the special status plant survey area) as a result of the construction of turbine footings, crane pads, turbine assembly areas, access roads, and underground collection circuits in Site 2. The Proposed Action would not impact the locations found in the other portions of the project area. The location documented in Devil's Canyon, outside of the Proposed Action boundary, would not be impacted.

Deboltia (CRPR 4.2) – the Proposed Action would impact approximately four individual plants (less than 1 percent of the plants documented in the special status plant survey area) as a result of the construction of turbine footing, crane pad, and a turbine assembly area in the northwest portion of Site 1. Several other individual plants were documented in this area, but their locations occur outside of the proposed work areas. The Proposed Action would not impact the locations found in the other portions of the project area. The location documented adjacent to Palm Canyon Wash, outside of the Proposed Action boundary, would not be impacted.

Wolf's cholla (CRPR 4.3) – the Proposed Action would impact approximately 1,694 individual plants (approximately 7 percent of the plants documented in the special status plant survey area) as a result of the construction of turbine footings, crane pads, turbine assembly areas, access roads, underground collection circuits, and the substation/switchyard in Site 1.

Long-lobed four o'clock (CRPR 4.3) – the Proposed Action would impact approximately 11 individual plants (approximately 4 percent of the plants documented in the special status plant survey area) as a result of the construction of the access road within Site 2. Many more individual plants were documented in these areas, but their locations occur outside of the proposed work areas.

Thurber's pilostyles (CRPR 4.3) – the Proposed Action would impact approximately 18 host plants (approximately 6 percent of the plants documented in the special status plant survey area) and, therefore, this species as a result of the construction of turbine footings, crane pads, turbine assembly areas, access roads, underground collection circuits in Site 1. Many more individual plants were documented in these areas, but their locations occur outside of the proposed work areas.

Impacts to these special status plant species would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-1c (*Implement special status plant species avoidance/restoration/compensation*), Veg-1d (*Implement an Integrated Weed Management Plan*), Air-1 (*Implement a Fugitive Dust Control Plan*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*).

Activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways also would result in indirect impacts to special status plant species from increased levels of dust that may settle on the plants. Increased levels of dust on plants can affect plants' photosynthetic capabilities, affect their productivity and nutritional qualities, and degrade the overall vegetation community. Impacts from fugitive dust would be mitigated by implementation of Mitigation Measure Air-1 (*Implement a fugitive dust control plan*).

Federal and State Jurisdictional Areas

Following completion of the jurisdictional delineation for the OWEF, the Applicant made design changes to the Proposed Action to minimize impacts to jurisdictional areas, and to specifically avoid placing permanent project features (i.e., turbine footings, crane pads, the substation/switchyard, and O&M area) in drainages that were mapped as 8-feet-wide or larger. Access roads and underground collection circuits were also redesigned to cross larger drainages at right angles to the extent practicable.

Even with the design changes made to the Proposed Action, implementation of the OWEF will result in temporary and permanent impacts to 6.62 acres of federal non-wetland waters of the U.S. and 23.84 acres of CDFG jurisdictional areas (Table 4.17-3). Direct impacts would include removal of CDFG jurisdictional habitats and/or filling of non-wetland waters of the U.S./jurisdictional streambed areas to create road crossings. Examples of indirect impacts to jurisdictional resources are streambank erosion and stream sedimentation. These jurisdictional areas provide beneficial hydrological functions and services typical of low disturbance desert scrub systems. These functions include, but are not limited to, groundwater recharge, flood peak attenuation, floodwater storage, sediment trapping and transport, nutrient trapping, and wildlife habitat. The functions that these jurisdictional areas provide would be impaired by construction and operation of the OWEF.

As stated above, the Proposed Action would result in temporary and permanent impacts to ACOE jurisdictional areas (i.e., non wetland Waters of the U.S.) that would total 6.62 acres (Figure 4.17-3; Table 4.17-3). ACOE jurisdictional drainages occur throughout Site 1 and Site 2. The majority of the impacts would be to 1-foot to 7-foot-wide drainages that are typically only a few inches deep. These smaller drainages carry short-term surface flows during seasonal rain events. Access roads and the underground collection system would impact larger drainages, including drainages up to 80-feet wide in the northeast portion of Site 1. Given the anticipated impacts to ACOE jurisdictional areas the Applicant is required to obtain the applicable permits from the ACOE and RWQCB. It is anticipated that the project would need to obtain an Individual Permit from the ACOE in accordance with Section 404 of the Clean Water Act and a Water Quality Certification from the RWQCB in accordance with Section 401 of the Clean Water Act. The Applicant submitted applications to the ACOE and RWQCB in May 2011. These permits would include mitigation measures that would be implemented by the project Applicant including, but not limited to, preparation and implementation of a Jurisdictional Mitigation Plan (Veg-3). The Proposed Action would result in temporary and permanent impacts to CDFG-jurisdictional streambed and to the following CDFG vegetation types: allscale scrub, cheesebush scrub, creosote bush-allscale scrub, creosote bush-fourwing saltbush scrub, fourwing saltbush scrub, mesquite thicket, and smoke tree woodland (Figure 4.17-4; Table 4.17-3). The Proposed Action would result in temporary and permanent impacts to a total of 23.84 acres of CDFG-jurisdictional areas. As noted above for ACOE-jurisdictional areas, the majority of the impacts would be to 1-foot to 7-foot-wide drainages that are typically only a few inches deep. Impacts to CDFG-jurisdictional areas would occur as a result from access road and underground collection system construction in the northern and northeastern portions of Site 1. Given the anticipated impacts to CDFG jurisdictional areas the Applicant is also required to obtain a Streambed Alteration Agreement from the CDFG in accordance with Section 1602 of the California Fish and Game code. The Applicant submitted an application to CDFG in May 2011. This permit would include mitigation measures that would be implemented by the Applicant including, but not limited to, preparation and implementation of a Jurisdictional Mitigation Plan (Veg-3). Based on the mutual agreement of the BLM, ACOE, USFWS and CDFG the proposed mitigation for offsetting jurisdictional impacts (as well as

Table 4.17-3. Temporary and Permanent Impacts to Jurisdictional Areas (Acre[s])

Jurisdictional Area	Alternative 1				Alternative 2				Alternative 3			
	ACOE		CDFG		ACOE		CDFG		ACOE		CDFG	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Wetlands												
Allscale scrub	0	0	0.98	0.07	0	0	0.46	0.07	0	0	0	0
Cheesebush scrub	0	0	11.67	3.46	0	0	10.74	3.22	0	0	6.65	1.67
Creosote bush-allscale scrub	0	0	0.06	0	0	0	0.06	0	0	0	0	0
Creosote bush-fourwing saltbush scrub	0	0	0.18	0.10	0	0	0.13	0.08	0	0	0	0
Fourwing saltbush scrub	0	0	0.03	0.02	0	0	0.03	0.02	0	0	0	0
Mesquite thicket	0	0	<0.01	0	0	0	<0.01	0	0	0	0	0
Smoke tree woodland	0	0	1.97	0.14	0	0	1.93	0.11	0	0	0.99	0.02
Non-Wetlands												
Drainage/Streambed	5.60	1.02	4.39	0.77	5.40	0.98	4.23	0.74	4.08	0.65	3.34	0.53
Subtotal	**5.60**	**1.02**	**19.28**	**4.56**	**5.40**	**0.98**	**17.58**	**4.24**	**4.08**	**0.65**	**10.98**	**2.22**
TOTAL	6.62		23.84		6.38		21.82		4.73		13.20	

impacts to Peninsular bighorn sheep Essential Habitat and sensitive vegetation communities) on the OWEF site includes habitat restoration of the approximately 318-acre Carrizo Marsh in Anza-Borrego Desert State Park through removal of dense stands of mature salt cedar (*Tamarix* spp.) trees. A draft of the mitigation plan has been submitted to BLM and resource agencies for review and is attached as Appendix L2 to the Final EIS/EIR. Impacts to federal and state jurisdictional areas would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-1d (*Implement an Integrated Weed Management Plan*), Air-1 (*Implement a Fugitive Dust Control Plan*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*), and Veg-3 (*Implement a Jurisdictional Mitigation Plan*).

Invasive Weeds

Invasive weeds are threats to native vegetation resources. They can displace native plants (including special status plant species that are present in the proposed OWEF site), increase the threat of wildfire by increasing fuel load, and supplant plants used as forage that are important to herbivorous species (including special status plant species that are present in the proposed OWEF site). Invasive weeds threaten vegetation resources in that they can exclude native plants (including special status species occurring in the project area), alter habitat structure, increase fire frequency and intensity, decrease forage for herbivorous wildlife (including special status species), and decrease water availability for both plants and wildlife. The Integrated Weed Management Plan (Mitigation Measure Veg-1d) for the project shall include a risk assessment of the invasive weed species currently known within the proposed OWEF site.

Vehicles are the primary conduits for the spread of many invasive weeds. Construction activities and soil disturbance associated with the Proposed Action could indirectly introduce new invasive weeds to the proposed OWEF site and could further spread invasive weeds (such as Saharan mustard) that are already present in the proposed OWEF site. Potential impacts from invasive plant species would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-1d (*Implement an Integrated Weed Management Plan to control non-native invasive weeds*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*), and Veg-3 (*Implement a Jurisdictional Mitigation Plan*).

Operation and Maintenance

Operation and maintenance activities associated with the Proposed Action would result in direct temporary and permanent losses of native vegetation if vegetation clearing, grading, or other surface disturbance (e.g., driving over vegetation) is needed during O&M activities, such as grading of access roads or repair of WTGs. O&M activities also would affect special status plant species if special status plant species occur in areas where temporary impacts associated with O&M activities would occur. Use of access roads during O&M activities for the Proposed Action could result in indirect impacts to vegetation communities and special status plants as a result of fugitive dust although fugitive dust impacts will be less impacting during this phase given the reduced number of vehicle trips as compared to the construction phase. O&M activities would result in impacts to federal and state jurisdictional areas if temporary impacts associated with O&M occur in areas that fall under the jurisdiction of the ACOE and/or CDFG, such as the repair of road crossings along jurisdictional drainages. Jurisdictional impacts associated with O&M activities would be addressed through a separate permitting process with the ACOE, RWQCB, and CDFG. O&M activities associated with the Proposed Action also could indirectly introduce new invasive weeds to the proposed OWEF site and could further spread invasive weeds (such as Saharan mustard) that are already present in the proposed OWEF site. Impacts from fugitive dust would be mitigated by implementation of Mitigation Measure Air-1 (*Implement a fugitive dust control plan*). Potential impacts from invasive plant species would be mitigated by implementation of Mitigation Measure Veg-1d (*Implement an Integrated Weed Management Plan to control non-native invasive weeds*).

Impacts to sensitive vegetation communities would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-1d (*Implement an Integrated Weed Management Plan*), Air-1 (*Implement a Fugitive Dust Control Plan*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*). Impacts from fugitive dust would be mitigated by implementation of Mitigation Measure Air-1 (*Implement a Fugitive Dust Control Plan*). Impacts to special status plant species would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-1c (*Implement special status plant species avoidance/restoration/ compensation*), Veg-1d (*Implement an Integrated Weed Management Plan*), Air-1 (*Implement a Fugitive Dust Control Plan*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*). Impacts to jurisdictional areas would require permits from the appropriate agencies that would include mitigation measures including, but not limited to, preparation and implementation of a Jurisdictional Mitigation Plan (Veg-3). Potential impacts from invasive plant species would be mitigated by implementation of Impacts to sensitive vegetation communities would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-1d (*Implement an Integrated Weed Management Plan*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*).

Decommissioning

Decommissioning activities associated with the Proposed Action would result in direct and indirect temporary and permanent impacts to sensitive vegetation communities from vegetation clearing, grading, or other surface disturbance. Examples of effects to sensitive vegetation communities during decommissioning would include widening of access roads and/or clearing for staging areas. It is expected that the impacts during decommissioning would occur in the same locations as the temporary impact areas used during construction of the project. Decommissioning includes revegetation/restoration of the OWEF site. Decommissioning activities also would affect special status plant species if special status plant species occur in decommissioning impact areas. Decommissioning activities would result in impacts to federal and state jurisdictional areas if impacts associated with decommissioning occur in areas that fall under the jurisdiction of the ACOE and/or CDFG. Decommissioning could also result in the introduction or spread of invasive weeds if seed is introduced from vehicles or construction equipment. Impacts to sensitive vegetation communities would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize* *construction related impacts to the maximum extent practicable*), Veg-1b (*Conduct biological monitoring during project construction*), Veg-2a (*Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*). Impacts from fugitive dust would be mitigated by implementation of Mitigation Measure Air-1 (*Implement a fugitive dust control plan*). Impacts to special status plant species would be mitigated by implementation of Mitigation Measures Veg-1a (*Minimize construction related impacts to the maximum extent practicable*), Veg-1c (*Implement special status plant species avoidance/restoration/compensation*), and Veg-2b (*Provide habitat restoration or habitat compensation for temporary impacts to sensitive vegetation communities*). Impacts to jurisdictional areas would require permits from the appropriate agencies that would include mitigation measures including, but not limited to, preparation and implementation of a Jurisdictional Mitigation Plan (Veg-3). Potential impacts from invasive plant species would be mitigated by implementation of Mitigation Measure Veg-1d (*Implement an Integrated Weed Management Plan to control non-native invasive weeds*).

4.17.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the Proposed Action (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.17.2. Only those significance criteria, which were determined in Section 4.17.2 to be relevant to the project, are addressed below.

Construction

- **V-1.** The Proposed Action is anticipated to result in impacts to individuals or populations of the following six special status plant species observed within the survey area (Table 4.17-2): Harwood's milk-vetch, brown turbans, deboltia, Wolf's cholla, long-lobed four o'clock, and Thurber's pilostyles. These impacts would be significant and mitigation is required.

  The introduction of new weed species into the proposed OWEF site or the spread of existing populations of weed species would be a significant impact to sensitive vegetation communities and special status plant species.

  Increased levels of dust on special status plants affecting these plants' photosynthetic capabilities would be a significant impact.

- **V-2.** The Proposed Action would result in significant temporary and permanent impacts to 81.6 acres of sensitive vegetation communities. These impacts include 5.9 acres of brittle bush scrub, 7.4 acres of desert agave scrub, less than 0.1 acre of mesquite thicket, 11.8 acres of smoke tree woodland, 50.0 acres of teddy bear cholla scrub, and 6.5 acres of white bursage scrub. In addition, the Proposed Action would result in significant temporary and permanent impacts to 23.84 acres of CDFG jurisdictional areas (Table 4.17-3).

  Increased levels of dust on plants affecting plants' photosynthetic capabilities and degrading overall vegetation communities would be a significant impact.

- **V-3.** Implementation of the Proposed Action would result in significant temporary and permanent impacts to ACOE jurisdictional areas totaling 6.62 acres (Table 4.17-3).

Operation and Maintenance

- **V-1**. The Proposed Action would not result in an additional significant impact to any special status plant species during O&M.

  The introduction of new weed species into the proposed OWEF site or the spread of existing populations of weed species could potentially occur during O&M. This would be a significant impact.

  Increased levels of dust on plants affecting plants' photosynthetic capabilities and degrading overall vegetation communities would be a significant impact.

- **V-2.** Temporary and permanent project-related impacts to sensitive vegetation communities and CDFG jurisdictional areas during O&M activities would be a significant impact.

- **V-3.** Temporary and permanent project-related impacts to ACOE jurisdictional areas during O&M activities would be a significant impact.

Decommissioning

- **V-1.** The Proposed Action could potentially result in significant impacts to special status plant species during decommissioning if special status plant species become established within areas temporarily impacted during construction. However, measures have been proposed to minimize the effects to special status plant species. If impacts to federal or state listed species would occur during decommissioning additional measures would be required as determine through coordination with the wildlife agencies.

  The introduction of new weed species into the proposed OWEF site or the spread of existing populations of weed species would be a significant impact to sensitive vegetation communities and special status plant species.

  Increased levels of dust on plants affecting plants' photosynthetic capabilities and degrading overall vegetation communities would be a significant impact.

- **V-2.** Temporary and permanent project-related impacts to sensitive vegetation communities and CDFG jurisdictional areas during decommissioning would be a significant impact.

- **V-3.** Temporary and permanent project-related impacts to ACOE jurisdictional areas during decommissioning would be a significant impact.

4.17.4 Alternative 2: 137 Wind Turbine Generators

4.17.4.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts included below covers construction, O&M, and decommissioning of Alternative 2.

Construction

Construction activities associated with the Alternative 2 would result in direct temporary and permanent losses of native vegetation and indirect effects resulting from vegetation clearing, grading, or other surface disturbance. Alternative 2 also would affect special status plant species and federal and state jurisdictional areas.

The total area estimated for use by Alternative 2 (including short-term disturbance) is approximately 615.3 acres within the approximately 12,435.6-acre project area. The 615.3-acre total impact area includes 9.8 acres of impacts that occurs off-site (i.e., the underground collection system and access road between Sites 1 and 2).

Alternative 2 would result in direct impacts to 14 of the 16 vegetation communities (allscale scrub, brittle bush scrub, cheesebush scrub, creosote bush scrub, creosote bush-brittle bush scrub, creosote bush-white bursage scrub, desert agave scrub, fourwing saltbush scrub, mesquite thicket, smoke tree woodland, streambed, teddy bear cholla scrub, white bursage scrub, and Wolf's cholla scrub), one of the three natural land cover types (badland/mudlands), and the three altered land cover types (developed, disturbed habitat, and railroad; Table 4.17-1).

Alternative 2 would result in direct impacts to 76.6 acres of the following sensitive vegetation communities: 3.3 acres of brittle bush scrub, 5.0 acres of desert agave scrub, less than 0.1 acre of mesquite thicket, 11.8 acres of smoke tree woodland, 50.0 acres of teddy bear cholla scrub, and 6.5 acres of white bursage scrub. The nature of these impacts similar to Alternative 1, but Alternative 2 would result decrease the impacts to sensitive vegetation communities by approximately 5.0 acres as compared to Alternative 1.

Disturbance of the soil's surface caused by construction traffic and other activities associated with Alternative 2 would result in indirect increased wind erosion of the soil. Dust can have deleterious physiological effects on plants and may affect their productivity and nutritional qualities. The nature of these impacts would be the same as that described for Alternative 1.

Mitigation for construction activities would be the same as for Alternative 1.

Special Status Plant Species

Alternative 2 is anticipated to result in impacts to individuals or populations of the following 6 special status plant species observed within the rare plant survey area: Harwood's milk-vetch (two individual plants; 6 percent), brown turbans (51,340 individual plants; 6 percent), deboltia (four individual plants; less than 1 percent), Wolf's cholla (1,431 individual plants; 6 percent), long-lobed four o'clock (10 individuals; 3 percent), and Thurber's pilostyles (18 host plants; 6 percent; Table 4.17-2). Impacts to Harwood's milk-vetch, deboltia, and Thurber's pilostyles would be the same as Alternative 1. Alternative 2 would impact one less individual of long-lobed four o'clock, approximately 7,697 fewer brown turbans, and approximately 263 fewer Wolf's cholla as compared to Alternative 1. Overall, the nature of Alternative 2 impacts would be similar to those described for Alternative 1.

Activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways also would result in indirect impacts to special status plant species from increased levels of dust that may settle on the plants. Increased levels of dust on plants can affect plants' photosynthetic capabilities, affect their productivity and nutritional qualities, and degrade the overall vegetation community. Mitigation for construction activities would be the same as for Alternative 1.

Federal and State Jurisdictional Areas

Alternative 2 would result in temporary and permanent impacts to federal non-wetland waters of the U.S. and CDFG jurisdictional areas with implementation of Alternative 2. Temporary and permanent project-related impacts to ACOE jurisdictional areas would total 6.38 acres and temporary and permanent project-related impacts to CDFG jurisdictional areas would total 20.82 acres (Table 4.17-3) with implementation of Alternative 2. The nature of these impacts is slightly less than that described for Alternative 1.

Operation and Maintenance

Use of access roads during O&M activities for Alternative 2 could result in direct and indirect impacts to vegetation communities and special status plants as a result of fugitive dust although fugitive dust impacts will be less impacting during this phase given the reduced number of vehicle trips as compared to the construction phase. O&M activities associated with Alternative 2 also could indirectly introduce new invasive weeds to the proposed OWEF site and could further spread invasive weeds (such as Saharan mustard) that are already present in the proposed OWEF site. These impacts would be the same as that for Alternative 1. Mitigation for O&M activities would be the same as for Alternative 1.

Decommissioning

Decommissioning activities associated with Alternative 2 would result in direct and indirect temporary and permanent losses of sensitive vegetation and direct effects resulting from vegetation clearing, grading, or other surface disturbance on a scale similar to construction of Alternative 1. Decommissioning activities also would affect special status plant species and federal and state jurisdictional areas on a scale similar to construction of Alternative 1. Decommissioning activities associated with Alternative 2 could result in the introduction or spread of invasive weeds similar to construction of Alternative 1. Mitigation for decommissioning activities would be the same as for Alternative 1.

4.17.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 2 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.17.2. Only those significance criteria, which were determined in Section 4.17.2 to be relevant to Alternative 2, are addressed below.

The CEQA determinations for construction, O&M, and decommissioning for Alternative 2 would be the same as for Alternative 1. Significant impacts would occur to sensitive vegetation communities, special status plant species, and ACOE and CDFG jurisdictional areas. In addition, significant impacts would result from fugitive dust and the potential spread of invasive weeds.

4.17.5 Alternative 3: 105 Wind Turbine Generators

4.17.5.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts included below covers construction, O&M, and decommissioning of Alternative 3.

Construction

The total area estimated for use by Alternative 3 (including short-term disturbance) is approximately 494.3 acres within the approximately 12,435.6-acre project area. The 494.3-acre total impact area includes 5.9 acres of impacts that occurs off-site (Figure 4.17-1). Alternative 3 would result in direct impacts to 11 of the 16 vegetation communities (brittle bush scrub, cheesebush scrub, creosote bush scrub, creosote bush-brittle bush scrub, creosote bush-white bursage scrub, desert agave scrub, smoke tree woodland, streambed, teddy bear cholla scrub, white bursage scrub, and Wolf's cholla scrub), and the three altered land cover types (developed, disturbed habitat, and railroad; Table 4.17-1).

Alternative 3 would result in direct impacts to the following sensitive vegetation communities: 0.4 acre of brittle bush scrub, 5.0 acres of desert agave scrub, 9.4 acres of smoke tree woodland, 47.8 acres of teddy bear cholla scrub, and 5.9 acres of white bursage scrub. The nature of these impacts similar to Alternative 1, but Alternative 3 would result decrease the impacts to sensitive vegetation communities by approximately 13.1 acres as compared to Alternative 1.

As with the Proposed Action, disturbance of the soil's surface caused by construction traffic and other activities associated with Alternative 3 would result in direct and indirect increased wind erosion of the soil. Dust can have deleterious physiological effects on plants and may affect their productivity and nutritional qualities. The nature of these impacts would be the same as that described for Alternative 1.

Mitigation for construction activities would be the same as for Alternative 1.

Special Status Plant Species

Alternative 3 is anticipated to result in impacts to individuals or populations of the following three special status plant species observed within the rare plant survey area: deboltia (four individual plants; less than 1 percent), Wolf's cholla (1,431 individual plants; 6 percent), and Thurber's pilostyles (18 individual plants; 6 percent; Table 4.17-2). Impacts to deboltia and Thurber's pilostyles would be the same as Alternative 1. Alternative 2 would avoid impacts to Harwood's milk-vetch, brown turbans, and long-lobed four o'clock that would be impacted by Alternative 1. Alternative 2 would impact approximately 263 fewer Wolf's cholla as compared to Alternative 1. Overall the nature of Alternative 2 impacts would be similar to those described for Alternative 1.

Federal and State Jurisdictional Areas

Alternative 3 would result in temporary and permanent impacts to federal non-wetland waters of the U.S. and CDFG jurisdictional habitats with implementation of Alternative 3. Temporary and permanent impacts to ACOE jurisdictional areas would total 4.73 acres and temporary and permanent impacts to CDFG jurisdictional areas would total 13.2 acres (Table 4.17-3) with implementation of Alternative 3. The nature of these impacts is less than that described for Alternative 1.

Operation and Maintenance

Use of access roads during O&M activities for the Alternative 3 could result in direct and indirect impacts to vegetation communities and special status plants as a result of fugitive dust although fugitive dust impacts will be less impacting during this phase given the reduced number of vehicle trips as compared to the construction phase. O&M activities associated with Alternative 3 could further spread invasive weeds (such as Saharan mustard) that are already present in the proposed OWEF site. These impacts would be the same as that for Alternative 1. Mitigation for O&M activities would be the same as for Alternative 1.

Decommissioning

Decommissioning activities associated with Alternative 3 would result in direct and indirect temporary and permanent losses of native vegetation and direct effects resulting from vegetation clearing, grading, or other surface disturbance on a scale similar to construction of Alternative 1. Decommissioning activities also would affect special status plant species and federal and state jurisdictional areas on a scale similar to construction of Alternative 1. Mitigation for decommissioning activities would be the same as for Alternative 1.

4.17.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 3 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.17.2. Only those significance criteria, which were determined in Section 4.17.2 to be relevant to the Alternative 3, are addressed below.

The CEQA determinations for construction, O&M, and decommissioning for Alternative 3 would be the same as for Alternative 1. Significant impacts would occur to sensitive vegetation communities, special status plant species, and ACOE and CDFG jurisdictional areas. In addition, significant impacts would result from fugitive dust and the potential spread of invasive weeds.

4.17.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.17.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur, and existing conditions relevant to biological resources would continue, but this does not preclude future proposals for wind energy projects or other types of development.. No impacts associated with the proposed OWEF would occur. Future proposals for wind energy projects or other types of development would undergo an environmental review and permitting process and there would no assurance of certainty.

4.17.6.2 CEQA Significance Determinations

Alternative 4 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.17.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.17.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to biological resources would continue, but this does not preclude future proposals for construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur under Alternative 5. Future proposals for development would undergo an environmental review and permitting process and there would no assurance of certainty.

4.17.7.2 CEQA Significance Determinations

Alternative 5 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.17.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.17.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur and, therefore, no impacts associated with the proposed OWEF would occur, but the area would be available to wind power development in the future. If another wind energy project or other development project is implemented, similar impacts to biological resources as those described for the proposed OWEF could occur.

4.17.8.2 CEQA Significance Determinations

Alternative 6 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.17.9 Cumulative Impacts

4.17.9.1 Geographic Extent/Context

The geographic scope for the analysis of cumulative impacts related to sensitive vegetative resources includes the vicinity of all reasonably foreseeable cumulative projects and extends throughout western Imperial County and southeast San Diego County, as shown in Figures 4.1-1a and 4.1-1b. The proposed OWEF is located within or adjacent to federal, state, and county lands that are largely undeveloped and support native vegetation communities. The following are areas of biological significance that have potential to be affected by the proposed OWEF:

- California Desert Conservation Area
- BLM Limited Use and Controlled Use Lands
- Anza-Borrego Desert State Park

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resources being evaluated. The geographic scope of this analysis is based on the nature of the geography surrounding the proposed OWEF and the characteristics and properties of each resource. In addition, each project will have its own implementation schedule, which may or may not coincide or overlap with the proposed OWEF's schedule. This is a consideration for short-term impacts from the proposed OWEF. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the OWEF, except where otherwise noted.

A cumulative impact to native vegetation communities would occur if the proposed OWEF combined with the reasonably foreseeable cumulative projects in the vicinity which would result in those vegetation communities becoming limited in extent within the cumulative analysis area, or if the compensation requirements for those impacts cannot be achieved. A cumulative impact to special status plant species would occur if the proposed OWEF combined with the reasonably foreseeable cumulative projects in the vicinity would result in those special status plant species becoming limited in their distribution or population size within the cumulative analysis area, or if the compensation requirements for those impacts cannot be achieved. A cumulative impact to jurisdictional resources would occur if the proposed OWEF combined with the reasonably foreseeable cumulative projects in the vicinity would result in jurisdictional resources becoming limited in extent within the cumulative analysis area, or if the compensation requirements for those impacts cannot be achieved. A cumulative impact related to the introduction or spread of invasive weed species would occur if the proposed OWEF combined with the reasonably foreseeable cumulative projects in the vicinity would result in the introduction or spread of invasive weed species across the cumulative analysis area. A cumulative impact related to increased levels of fugitive dust would occur if the proposed OWEF combined with the other reasonably foreseeable cumulative projects in the vicinity would result in increased levels of dust settling on vegetation and special status plant species throughout the cumulative analysis area.

4.17.9.2 Existing Cumulative Conditions

Urbanization, population growth, and continuing development pressure particularly in Imperial, San Diego, and Riverside counties have brought about substantial changes to, and effects on, natural resources. Consequently, modification, alteration, and/or destruction of vegetation, special status plant species, federal and state jurisdictional areas, and the proliferation of invasive weeds are occurring throughout the region. Future growth and development in the analysis area will likely continue these impacts.

Based on a review of aerial photographs, biological reports for the reasonably foreseeable projects in the vicinity of the OWEF site (see Section 4.17.9.3), and botanists' observations of surrounding habitat, vegetation communities are largely similar in the analysis area and consist primarily of a variety of desert scrubs at lower elevations (except north and south of the Salton Sea in the Imperial and Coachella valleys where agriculture is dominant) and desert transitional habitats (such as semi-desert chaparral and Peninsular juniper woodlands) as well as chaparrals, montane scrubs, oak woodlands, and grasslands at higher elevations (such as in Jacumba, Boulevard, and McCain Valley, San Diego County).

Similarly, since much of the analysis area is desert, there are few wetlands present (and none on the proposed OWEF site); however, it is likely that federal non-wetland Waters of the U.S. and/or CDFG jurisdictional areas occur throughout the analysis area, as they do on the proposed OWEF site.

The proposed OWEF site supports special status plant species, although none of the species is federal or state listed. The majority of the cumulative impacts analysis area supports undeveloped lands, and these surrounding areas support many of the same special status plant species found on the proposed OWEF site.

Invasive weeds are present throughout the analysis area, although their numbers vary depending on the level of land disturbance. Saharan mustard, the most invasive weed found on the proposed OWEF site, is ranked as having a high level of invasiveness ranked as severe (Table 3.18-2; Cal-IPC, 2006). This species may pose the greatest threat to vegetation resources in the analysis area. Saharan mustard was mapped along 3,000 miles of (just) roadways throughout southern California in 2005 including along Interstate 8 and Imperial Highway on the proposed OWEF site (Cal-IPC, 2005).

4.17.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects; various BLM-authorized actions/activities; proposed or approved projects within the counties' jurisdictions; and other actions/activities that Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR. The projects that are located within the geographic area of effect for cumulative impacts are presented in Table 4.1-2 and listed below:

- ESJ Wind Project I
- Imperial Valley Solar – Solar Two
- Coyote Wells Specific Plan
- Ketchum Ranch
- Elder – TPM 20981
- Grizzle – TPM 20719
- Pacific Bell Cell Site
- Sunrise Powerlink
- SDG&E Proposed Photovoltaic Solar Field
- Renewergy, LLC
- Imperial Solar Energy Center – South
- Imperial Solar Energy Center – West
- Pacific Wind Development, LLC, Tule Wind Energy Project (TWEP)

Of particular note, the Sunrise Powerlink project (Figure 4.1-1b), a new 500-kV transmission line, traverses northeast-southwest through the proposed OWEF site resulting in impacts to vegetation in addition to those that would be caused by the OWEF. There is also the potential for impacts to special status plant species and federal and state jurisdictional areas, as well as for the introduction or spread of invasive weeds within and beyond the proposed OWEF site as a result of these two projects. It is important to note that the Sunrise Powerlink project includes the requirement to prepare and implement a Weed Control Plan for the project (Aspen, 2008).

Additionally, there are two other projects in very close proximity to the proposed OWEF that would result in impacts to vegetation and potentially federal and state jurisdictional areas and special status plant species. These projects also could result in the introduction or spread of invasive weeds. These projects are the proposed 944-acre Coyote Wells Specific Plan and the 3,912-acre Renewegy LLC Wind Testing Site (Tables 4.1-1 and 4.17-4; Figure 4.1-1b).

Also of particular note are development projects proposed on large tracts of land, which have the potential to reduce or eliminate large areas of native vegetation. Large-scale development projects in the vicinity of the proposed OWEF site include several large proposed solar developments (e.g., the approximately 6,500-acre Imperial Valley Solar-Solar Two project; 950-acre Imperial Solar Energy Center-South; 1,130-acre Imperial Solar Energy Center-West; 1,300-acre Mt. Signal Solar, etc) and several residential and mixed-use developments. Many of these projects would cause losses to native vegetation communities, special status plant species, and jurisdictional resources.

4.17.9.4 Construction, O&M, and Decommissioning

Construction, O&M, and decommissioning activities would result in temporary and permanent losses of native vegetation. Despite measures to protect vegetation and remediate losses, construction of the proposed OWEF would cause both temporary (during construction from vegetation clearing) and permanent (replacement of vegetation with project features such as WTGs and permanent access roads)

Table 4.17-4. Estimated Impacts

Project	Native Vegetation Permanent (acres)	Native Vegetation Temporary (acres)	Native Vegetation Total (acres)	Jurisdictional Areas (acres)	Special Status Plant Species Impacted
Proposed OWEF	Desert Scrubs: 151 Desert Woodland: 3 Badlands/Mudhills: 0.1 TOTAL: 154	Desert Scrubs: 482 Desert Woodland: 9 Badlands/Mudhills: 0.7 TOTAL: 492	Desert Scrubs: 633 Desert Woodland: 12 Badlands/Mudhills: 0.8 TOTAL: 646	Waters of the U.S.: 1.0 permanent and 5.6 temporary Waters of the State: 4.6 permanent and 19.3 temporary	No federal/state listed species 2 Harwood's milk-vetch 59,037 brown turbans 4 deboltia 1,694 Wolf's cholla 11 long-lobed four o'clock 18 Thurber's pilostyles
Sunrise Powerlink	Desert Scrubs: 36 Chaparrals: 181 Coastal/Montane Scrubs: 27 Grasslands/Meadows: 4 Riparian Forests/Woodlands: 0.25 Woodlands/Forests: 4 Unvegetated Channel: 1 TOTAL: 253	Desert Scrubs: 142 Chaparrals: 224 Coastal/Montane Scrubs: 67 Grasslands/Meadows: 48 Riparian Forests/Woodlands: 0.1 Woodlands/Forests: 4 Unvegetated Channel: 2 TOTAL: 487	Desert Scrubs: 178 Chaparrals: 405 Coastal/Montane Scrubs: 94 Grasslands/Meadows: 52 Riparian Forests/Woodlands: 0.35 Woodlands/Forests: 8 Unvegetated Channel: 3 TOTAL: 740	Waters of the U.S.: 3.8 permanent and 7.2 temporary Waters of the State: 4.1 permanent and 7.9 temporary	No federal or state listed species 3 Haydon's lotus 6 hairy stick-leaf 0 Mountain Springs bush lupine
Coyote Wells Specific Plan	Mesquite Hummock : 3	None	Mesquite Hummock : 3 TOTAL: 3	None	None
Renewegy LLC Wind Testing-Meteorological Towers	Desert Scrubs*	Desert Scrubs*	Desert Scrubs: 3,912*	Not available	Not available
Imperial Solar Energy Center-South	Desert Scrubs: 19 Desert Wash: 1 TOTAL: 20	Desert Scrubs: 7 Desert Wash: 1 TOTAL: 8	Desert Scrubs: 26 Desert Wash: 2 TOTAL: 28	Waters of the U.S.: unknown Waters of the State: 0.9 permanent and 0.8 temporary	No federal/state listed species 9 Wolf's cholla 6 host plants for Thurber's pilosytles
Imperial Solar Energy Center-West	Desert Scrubs: 12 Desert Wash: 7 TOTAL: 19	Desert Scrubs: 7 TOTAL: 7	Desert Scrubs: 19 Desert Wash: 7 TOTAL: 26	Waters of the U.S.: 0.3 permanent and 0.2 temporary Waters of the State: 7 permanent and 0.2 temporary	No federal/state listed species 2 brown turbans 49 host plants for Thurber's pilosytles
Imperial Valley Solar-Solar Two	Desert Scrubs: 5,117 TOTAL: 5,117	Desert Scrubs: 13 TOTAL: 13	Desert Scrubs: 5,130 TOTAL: 5,130	Waters of the U.S.: 167 permanent and 5 temporary (and 13 indirect) Waters of the State: 312 permanent	No federal/state listed species None of the special status species documented on the OWEF site were observed on this project site
Energía Sierra Juarez Transmission Line	Desert Scrub: 6 Desert Woodland/Scrub: 3 TOTAL: 9	None	Desert Scrub: 6 Desert Woodland/Scrub: 3 TOTAL: 9	None	None

Table 4.17-4. Estimated Impacts

Project	Native Vegetation Permanent (acres)	Native Vegetation Temporary (acres)	Native Vegetation Total (acres)	Jurisdictional Areas (acres)	Special Status Plant Species Impacted
Tule Wind Project and ECO Substation	Desert Scrubs: 86 Desert Woodland/Scrub: 78 Chaparrals: 397 Montane Scrubs: 7 Grassland: 2 Riparian Scrubs: 0.1 Woodlands: 1 Unvegetated Channel: 0.5 TOTAL: 572	Desert Scrubs: 59 Desert Woodland/Scrub: 20 Chaparrals: 172 Montane Scrubs: 15 Grassland: 3 Riparian Scrubs: 0.3 Woodlands: 1 Unvegetated Channel: 0.1 TOTAL: 270	Desert Scrubs: 145 Desert Woodland/Scrub: 98 Chaparrals: 569 Montane Scrubs: 22 Grassland: 5 Riparian Scrubs: 0.4 Woodlands: 2 Unvegetated Channel: 0.6 TOTAL: 842	Waters of the U.S.: 0.6 permanent and 0.2 temporary Waters of the State: 1 permanent and 0.8 temporary	No federal/state listed species 98 Mountain Springs bush lupine Unknown number of Haydon's lotus

*Based on assumptions about the project's size and location and included herein due to its very close proximity to the proposed OWEF.

significant impacts to vegetation communities as described in Section 4.17.3.1. Most of the projects identified in Table 4.1-2 and listed above also would result in temporary and permanent losses of vegetation communities, special status plant species, and jurisdictional resources through grading and clearing activities to construct roads, utility infrastructure, and commercial, industrial, and residential developments. Quantitative impact information for these resources is not available at this time for many of these projects. For those where it is available, it is provided in Table 4.17-4.

Many of the reasonably foreseeable projects within the cumulative impacts analysis area would likely impact the same types of vegetation communities as the proposed OWEF. Most of the projects in Table 4.17-4 would permanently impact less than 100 acres of desert scrub habitat, with the exception of the proposed Imperial Valley Solar Two project which would permanently remove approximately 5,000 acres of native vegetation communities. Similarly, temporary impacts with the projects listed in Table 4.17-4 would temporarily impact less than 100 acres of desert scrub habitat, except for Sunrise Powerlink, which would temporarily impact 142 acres of desert scrub habitat. Permanent losses and temporary impacts to vegetation associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact because these combined impacts have potential to reduce the extent of those communities within the cumulative impacts analysis area. For this reason, the cumulative impact would be considered significant under CEQA. The magnitude of the cumulative impact to native vegetation communities is small given that there nearly 200,000 acres of undeveloped desert lands within the cumulative impacts analysis area. The OWEF site's permanent impacts to 155.5 acres of vegetation communities amounts to less than 0.1 percent of the undeveloped desert lands in the cumulative impacts analysis area. The proposed OWEF and the other projects would be required to mitigate impacts to sensitive vegetation communities, and a sufficient amount of land is available to provide compensation for those projects' impacts. Implementation of Mitigation Measures Veg-1a, Veg-1b, Veg-1d, Veg-2a, Veg-2b, and Veg-3 to compensate the proposed OWEF's impacts to sensitive vegetation communities, and the reasonably foreseeable cumulative projects' mitigation for impacts to sensitive vegetation communities, would render the cumulative impact less than significant under CEQA.

Impacts to six special status plant species would result from proposed OWEF construction and, possibly, decommissioning. The reasonably foreseeable projects within the cumulative impacts analysis area would impact 3 of the same special status plant species, including brown turbans, Wolf's cholla, and the host plant for Thurber's pilostyles. In addition, reasonably foreseeable projects within the cumulative impacts analysis area would impact 3 of the other special status plant species documented on the OWEF site, including hairy stickleaf, Haydon's lotus, and Mountain Springs bush lupine. Given the amount of undeveloped lands within the cumulative analysis impact area and wide distribution and population sizes of the plant species found on the proposed OWEF site, the proposed OWEF and the reasonably foreseeable projects are not expected to reduce the distribution of the six special status plant species within the cumulative analysis impact area. Impacts to special status plant species associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact because these combined impacts have potential to reduce the population sizes of those special status plant species within the cumulative impacts analysis area. For this reason, the cumulative impact would be considered significant under CEQA. The population sizes of brown turbans, Wolf's cholla, and Thurber's pilostyles within the cumulative impacts analysis area is not known. For the purpose of this cumulative impacts analysis, the population size of each of the following species is assumed based on the population sizes documented on the OWEF site and the amount of suitable, undeveloped land within the analysis area: several million individuals of brown turbans, several hundred thousand individuals of Wolf's cholla, and several thousand Thurber's pilostyles. The OWEF site's impacts to 78,846 brown turbans individuals amounts to approximately 1 percent of the estimated population in the cumulative impacts analysis area. The OWEF site's impacts to 1,686 Wolf's cholla individuals amounts to less than 0.1 percent of the estimated population in the cumulative impacts analysis area. The OWEF site's impacts to 18 host plants for Thurber's pilostyles amounts to less than 0.1 percent of the estimated population in the cumulative impacts analysis area. Mitigation Measures Veg-1a, Veg-1b, Veg-1c, Veg-1d, Veg-2a, Veg-2b, and Veg-3 for the proposed OWEF include avoidance, restoration, and compensation for impacts to special status plant species. Based on a review of the environmental documents of the other reasonably foreseeable projects listed in Table 4.17-4 that occur in the cumulative impacts analysis area, those projects either require or propose similar mitigation measures (i.e., avoidance where feasible, plant and soil salvage, seed collection, and habitat restoration/acquisition requirements) to mitigate those projects' impacts to special status plant species. Implementation of the mitigation measures would render the cumulative impact less than significant under CEQA.

Construction and, possibly, decommissioning activities would result in impacts to jurisdictional features through vegetation removal and placement of fill. Despite measures to protect jurisdictional resources and remediate losses, construction of the proposed OWEF would cause both temporary and permanent significant impacts to jurisdictional features as described in Section 4.17.3.1. The reasonably foreseeable projects within the cumulative impacts analysis area would likely impact the same types of jurisdictional resources as the proposed OWEF. Most of the projects in Table 4.17-4 would permanently impact less than 10 acres of jurisdictional habitat, with the exception of the proposed Imperial Valley Solar Two project which would permanently remove approximately 167 acres of Waters of the U.S. and permanently remove 312 acres of Waters of the State. Similarly, temporary impacts with the projects listed in Table 4.17-4 would temporarily impact less than 10 acres of jurisdictional habitat. Impacts to jurisdictional resources associated with the proposed OWEF combined with impacts associated with past, present, and future projects are considered a cumulative impact because the impacts have a potential to reduce the extent of those jurisdictional resources within the cumulative impacts analysis area. For this reason, the cumulative impact would be considered significant under CEQA. The magnitude of the cumulative impact to jurisdictional features is small given that there tens of thousands of acres of jurisdictional habitats within the cumulative impacts analysis area. The OWEF site's permanent impacts to Waters of the U.S. and Waters of the State amounts to less than 0.1 percent of the jurisdictional habitats in the cumulative impacts analysis area. The proposed OWEF and the other reasonably foreseeable projects would be required to mitigate impacts to jurisdictional resources based on the no net loss policy, and a sufficient amount of land is available to provide compensation for those projects' impacts to jurisdictional resources. Implementation of Mitigation Measures Veg-1a, Veg-1b, Veg-1c, Veg-1d, Veg-2a, Veg-2b, and Veg-3 for the proposed OWEF and the reasonably foreseeable cumulative projects' mitigation for impacts to jurisdictional resources would render the cumulative impact to jurisdictional resources less than significant under CEQA.

Proposed OWEF construction, O&M, and decommissioning activities would result in ground disturbance which has the potential to result in the introduction or spread of invasive weed species. Invasive weed species exist within the cumulative impacts analysis area as a result of natural events such as wildfires, as well as from past and ongoing residential, commercial, and industrial development. The proposed OWEF and the reasonably foreseeable projects within the cumulative impacts analysis area have the potential to introduce or spread invasive weed species throughout the cumulative impacts analysis area. For this reason, the impact is considered cumulative and significant under CEQA. The proposed OWEF and the majority of the other reasonably foreseeable projects would be required to mitigate impacts associated with invasive weed species through the preparation and implementation of Weed Management Plans and Weed Control Plans. Implementation of Mitigation Measures Veg-1a, Veg-1b, Veg-1d, and Veg-2b would offset the potential impacts associated with the introduction and spread of invasive weed species for the proposed OWEF. Those measures, combined with the reasonably foreseeable cumulative projects' mitigation for potential impacts from invasive weeds would render the cumulative impact less than significant under CEQA.

Proposed OWEF construction, O&M, and decommissioning activities could result in increased levels of airborne dust that may settle on surrounding vegetation. Increased levels of dust on plants can significantly impede the plants' photosynthetic capabilities and degrade the overall vegetation community. The reasonably foreseeable projects within the cumulative impacts analysis area also have the potential to result in increased levels of airborne dust. Impacts associated with fugitive dust associated from the proposed OWEF combined with impacts associated with past, present, and future projects would be considered a cumulative impact, and one that is significant, if all of the projects were constructed at the same time. The proposed OWEF and the reasonably foreseeable projects would be required to mitigate impacts associated with fugitive dust through the preparation and implementation of Dust Control Plans, which include regular watering of access roads, staging areas, and other temporary use areas during clearing, grading, earth-moving, excavation, or other construction activities and establishing a maximum speed limit on dirt access roads to reduce the amount of airborne dust generated. Implementation of Mitigation Measure Air-1 (*Implement a Fugitive Dust Control Plan*) for the proposed OWEF combined with the reasonably foreseeable cumulative projects' mitigation for impacts from fugitive dust would offset the impacts on surrounding plants and vegetation communities and would render the cumulative impact less than significant under CEQA. It should be noted that the construction of the proposed OWEF and the three nearest projects (i.e., Sunrise Powerlink, Coyote Wells Specific Plan, and Renewegy LLC Wind Testing) would not completely overlap, so the cumulative impact of fugitive dust in the immediate project vicinity of these projects would be less severe than if they were under construction simultaneously. Proposed OWEF construction is proposed to begin in fall 2011 and end by 2014. Sunrise Powerlink tower erection would be complete by the end of 2011 (but conductoring would continue into 2012). Phase I construction of Coyote Wells would overlap with proposed OWEF construction. Renewegy LLC Wind Testing construction may be complete prior to proposed OWEF construction.

4.17.9.5 CEQA Significance Determinations

Following implementation of BMPs and mitigation measures presented in Section 4.17.10, all adverse impacts resulting from construction, operation and maintenance, and decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced and the proposed project's incremental contribution to cumulative impacts on Vegetation resources would not be significant.

4.17.10 Mitigation Measures

Veg-1a Final engineering of the project shall reduce the size of the permanent and temporary construction work areas where possible and minimize the impacts to sensitive vegetation communities and special status plant species. Prior to the start of construction, all permanent and temporary work areas (including, but not limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils) shall be delineated with staking and flagging to clearly identify the limits of work and shall be verified by the biological monitor (Mitigation Measure Veg-1b) prior to ground disturbing activities. If fencing is used instead of stakes and flagging, the design of the fencing shall be done in coordination with the Wildlife Agencies. The Biological Monitor(s) shall be responsible for monitoring to ensure that all delineated disturbance boundaries remain intact and shall monitor for any disturbance outside of the boundaries. Staking and flagging (or fencing, if used) shall remain in place for the duration of construction. Spoils shall be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimized. All disturbances, vehicles, and equipment shall be confined to the staked/flagged or fenced areas.

When feasible, construction activities shall implement drive and crush rather than grading. Construction equipment would drive over and crush native plants to minimize impacts to the roots of desert shrubs. Drive and crush is expected to reduce the recovery time of desert scrubs within the temporary construction areas.

Veg-1b Prior to ground disturbing activities, an individual shall be designated and approved by the BLM and Wildlife Agencies (USFWS and CDFG) as a Designated Biologist (i.e., field contact representative). A Designated Biologist will be designated for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on vegetation restoration. The Designated Biologist shall have the authority and responsibility to halt activities that are in violation of the Mitigation Measures. To avoid and minimize effects to biological resources, the Designated Biologist shall:

- Notify BLM's Authorized Officer and the wildlife agencies at least 14 calendar days before initiating ground disturbing activities.
- Immediately notify BLM's Authorized Officer and the wildlife agencies in writing if the project Applicant does not comply with any of the mitigation measures.
- Conduct compliance inspections at a minimum of once per month during on-going construction after clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete.

Prior to project initiation, the Designated Biologist shall implement a Worker Education Awareness Program (WEAP) that shall be available in English and Spanish. Wallet-sized cards summarizing the information will be provided to all construction and operation and maintenance (O&M) personnel. The WEAP shall include the following:

- An explanation of the function of flagging that designates authorized work areas.
- An explanation of the sensitivity of the vegetation communities and special status plant species within and adjacent to work areas.
- The importance of avoiding the introduction of invasive weeds onto the proposed OWEF site and surrounding areas.

Veg-1c Implement special status plant species avoidance/restoration/compensation. If necessary and prior to the start of construction, a qualified biologist shall conduct focused surveys during the appropriate blooming period for special status plant species for all portions of the proposed project that have not been previously surveyed and the results of those surveys shall be submitted to the BLM for review and approval. When feasible, construction activities should avoid special status plant species. The Habitat Restoration/ Revegetation Plan (Mitigation Measure Veg-2b) shall include methods to salvage soil and seed in areas containing special status plant species for use in the revegetation of temporary impact areas, and shall specify container stock and seed of the affected special status plant species for use in restoration/revegetation areas. Native container stock and seed shall originate from geographic distances as close as possible to the project site and/or from areas of ecological similarity.

Veg-1d Implement an Integrated Weed Management Plan to control non-native invasive weeds as developed in cooperation with the BLM and County of Imperial. The Integrated Weed Management Plan for the project shall include a risk assessment of the invasive weed species currently known within the proposed OWEF site, procedures to control their spread on site and to adjacent off-site areas, and procedures to help minimize the introduction of new weed species. The Integrated Weed Management Plan shall be submitted to the BLM and County for review and approval prior to the start of construction and shall be implemented prior to, during, and following the completion of construction for the life of the project.

Air-1 Implement a Fugitive Dust Control Plan. This measure is presented in Section 4.2.10.

Veg-2a Permanent impacts to sensitive vegetation communities shall be compensated through a combination of compensation and restoration at a minimum 1:1 ratio or as required by the permitting agencies. Habitat compensation shall be accomplished through agency-approved land preservation or mitigation fee payment for the purpose of habitat compensation of lands supporting comparable habitats to those lands impacted by the proposed project. Restoration may be appropriate as mitigation for permanent impacts provided that restoration is demonstrated to be feasible and the restoration effort is implemented pursuant to a Habitat Restoration/Revegetation Plan (Mitigation Measure Veg-2b).

Veg-2b Temporarily disturbed areas shall be revegetated according to a Habitat Restoration/ Revegetation Plan (HRRP) approved by the BLM and Wildlife Agencies. The HRRP must be approved in writing prior to the initiation of any vegetation disturbing activities. Restoration involves recontouring the land and replacing topsoil (if it was collected). Revegetation also involves planting seed and/or container stock, maintaining the plantings (e.g., weeding, replacement planting, supplemental watering), and monitoring the restored/revegetated areas for a period of at least five years (or until the restoration/ revegetation meets all success criteria). The HRRP shall include methods to salvage soil and seed in areas containing special status plant species for use in the revegetation of temporary impact areas, and shall include container stock and seed of the affected special status plant species for use in restoration/revegetation areas. Restoration measures in desert environments include alleviating soil compaction, returning the surface to its original contours, pitting or imprinting the surface to allow small areas where seeds and rain water can be captured, planting seedlings with root mass necessary to survive without watering, planting seedlings in the spring with herbivory cages, broadcasting locally collected seed immediately prior to the rainy season, and covering seeds with mulch. The final success criteria for restored/revegetated areas are as follows: (1) Native vegetation cover measured within revegetated areas should be at least 70 percent of that measured at reference sites located in similar habitat; (2) non-native vegetation cover within revegetated areas should be equal to or less than that measured at reference sites located in similar habitat, and (3) recruitment (the successful, natural reproduction and/or establishment of plants in a given area) of native plants should demonstrate at least 40 percent of the recruitment observed in a reference site located in similar habitat. If after five years of monitoring there are areas that do not meet the success criteria, these areas shall be compensated off site at a 1:1 ratio of equal or better quality habitat compared to what was impacted, in accordance with Mitigation Measure Veg-2a.

Veg-3 The Applicant shall implement a Jurisdictional Mitigation Plan to describe the mitigation for impacts to jurisdictional areas within the proposed OWEF site. The Jurisdictional Mitigation Plan shall be submitted to the ACOE, Regional Water Quality Control Board (RWQCB), and

CDFG for review and approval and shall describe the location and size of the mitigation proposed, description of the habitat creation/restoration effort, success criteria, and maintenance and monitoring specifications. The Applicant proposes to remove dense, mature stands of tamarisk within the approximately 318-acre Carrizo Marsh to mitigate impacts to jurisdictional areas, which is described in the Draft Off-site Habitat Restoration Plan. The final success criteria in the Draft Off-site Habitat Restoration Plan are as follows: 0 percent cover of tamarisk in the shrub layer; less than 5 percent cover of tamarisk in the herb layer; less than 5 percent cover by other noxious weed species; and less than 20 percent cover by other non-native species at the end of 5 years of maintenance.

Impacts of Mitigation Implementation

Implementation of some of the mitigation measures described above could cause certain environmental effects, which would primarily be temporary in nature. Specifically, implementation of Mitigation Measures Veg-1d and Veg-2b could cause disturbance to sensitive vegetation and special status plant and wildlife resources.

Implementation of weed control as part of the Integrated Weed Management Plan (Veg-1d) and HRRP (Veg-2b) has the potential to impact sensitive vegetation and special status plant and wildlife resources on the proposed OWEF site. For example, plants and wildlife could be crushed by vehicles used to access the site, and herbicide application could harm non-target plant species as well as wildlife. Measures, such as, but not limited to, keeping vehicles on permanent access roads, using herbicides with low toxicity, not using herbicides during critical wildlife breeding or staging periods, and only spraying herbicide during low-wind conditions, have been incorporated into the these plans to minimize or avoid potential impacts from the implementation of these mitigation measures for vegetation and wildlife resources.

4.17.11 Residual Impacts After Mitigation

Implementation of the avoidance, minimization, and mitigation measures described in Section 4.17 would mitigate the direct and indirect impacts to vegetation resources, including permanent and temporary impacts to vegetation communities, special status plant species, and federal and state jurisdictional areas, on the OWEF site. Under CEQA, implementation of the avoidance, minimization, and mitigation measures would mitigate impacts to vegetation resources to a level below significance. Implementation of the required mitigation would not result in any additional impacts to vegetation resources. No residual impacts to vegetation resources would occur with the implementation of the avoidance, minimization, and mitigation measures.

4.18 Visual Resources

This section discusses effects on visual resources that would occur with implementation of the Proposed Action and alternatives, including cumulative effects, and mitigation measures to avoid or reduce visual effects. Overall, the project would result in the long-term visual alteration of landscapes comprised of BLM-administered lands, other public lands, and private lands. However, the majority of the actual land disturbance would take place on BLM-administered lands to be managed under an Interim VRM Class IV designation.

4.18.1 Methodology for Analysis

The Proposed Action and alternatives are analyzed for their effects on visual resources using an assessment of the visual contrast within the landscape created by components of the project. Impacts to the inventoried visual resource values (see Appendix E-1) are evaluated through a contrast rating process described below. The degree to which the Proposed Action and alternatives affect the visual quality of a landscape is directly related to the amount of visual contrast between the alternative and the existing landscape character. As indicated above, the project site is located on BLM-administered lands managed under an Interim VRM Class IV designation, which permits a high level of change to the landscape, including activities that may dominate views. A VRM Class IV designation does not necessarily mean that the area has low visual value.

The factors considered in determining impacts on visual resources included: (1) scenic quality of the project site and vicinity; (2) available visual access and visibility, frequency, and duration that the landscape is viewed; (3) viewing conditions (distance, angle of observation, relative size or scale, spatial relationships, motion, light conditions, seasonable variability and use, atmospheric conditions, and recovery time) and the degree to which project components would dominate the view of the observer; (4) resulting contrast (form, line, color, and texture) of the proposed facilities or activities with existing landscape characteristics; (5) the extent to which project features or activities would block views of higher value landscape features; and (6) the level of public interest in the existing landscape characteristics and concern over potential changes. Computer modeling and rendering techniques were used to produce simulations of the project site as it would appear with project implementation as seen from several Key Observation Points (KOPs). The project simulations assisted in the on-site assessment of the contrast of the project with existing landscape elements. The project contrast with those elements was then rated as none, weak, moderate, or strong.

An *adverse visual impact* typically occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) aesthetic features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the visual impact depends upon how noticeable the adverse change may be. The noticeability of a visual impact is a function of project features, context, and viewing conditions (angle of view, distance, primary viewing directions, and duration of view).

Impacts on visual resources within the study area could result from various activities including: structure construction, establishment of construction staging areas and access roads, and project operation or presence of the built facilities. The impact methodology is described in greater detail in Appendix E-2 and the results of the impact assessment are summarized and presented as a series of foldout tables in Appendix E-1.

In addition to assessing the contrast of the project with the surrounding landscape, the BLM also has to assess the conformance of the project with the Interim VRM Class Objectives for the project area; however, the CDCA Plan does not have Resource Management Plan-approved VRM objectives, and this planning effort is establishing an interim class that conforms with the land use allocation in the existing plan. The existing plan allocation allows for renewable energy development in MUC-L (Limited), and this level of (wind) development can only conform with interim Class IV objectives. Nevertheless, the overall goal remains to mitigate visual impacts so that any adverse contrasts can be minimized while meeting the purpose of the project. In addition to the permanent visual contrast created in the landscape, the proposed project and alternatives are analyzed for adverse effects due to lighting and glare, visible dust plumes, as well as temporary construction-related disturbances.

4.18.2 CEQA Significance Criteria

The significance criteria listed below were used to determine if the proposed OWEF would result in impacts to visual resources under CEQA. These are the same significance criteria for aesthetics listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. The criteria used to assess the significance of visual impacts resulting from a project take into consideration the factors described in Section 4.18.1 above, as well as federal, state, and local policies and guidelines pertaining to visual resources. Appendix G of the CEQA Guidelines identifies four circumstances that can lead to a determination of significant visual impact. These have been adapted as set forth below for the analysis that follows.

Vis-1 *Project construction or the long-term presence of project components would cause a substantial effect on a scenic vista.*

Vis-2 *Project construction or the long-term presence of project components would substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within view of a State Scenic Highway.*

Vis-3 *Project construction or the long-term presence of project components would substantially degrade the existing visual character or quality of the site and its surrounding landscape. [Note: Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color.]*

Vis-4 *Project construction or the long-term presence of a project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or be hazardous to motorists or pedestrians.*

4.18.3 Alternative 1: Proposed Action

4.18.3.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts for the action alternatives (i.e., Alternatives 1 through 3) has been organized according to these following project phases: construction, operation and maintenance, and decommissioning. The nature and severity of the impacts are discussed below under each subheading.

Construction

Construction of the proposed OWEF would cause temporary visual impacts due to the presence of equipment, materials, and workforce. These impacts would occur throughout the development area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction would include site clearing and grading, construction of the actual facilities, and site cleanup and restoration. Visible traffic would also increase along I-8, SR98, S2 (Imperial Highway), and the BLM recreational access road during construction, and grading activities would generate dust clouds, which can be visually distracting if not controlled properly. Construction activities would be visible from I-8 (the primary travel corridor in the region), SR98, S2, BLM recreational access roads, the community of Ocotillo, Anza-Borrego Desert State Park (ABDSP), Jacumba Mountains, Jacumba Wilderness, Coyote Mountains, and Coyote Mountains Wilderness. Throughout the construction period, the industrial character of the activities would constitute adverse visual impacts relative to impact criterion number 1 (impact on scenic vistas) and impact criterion number 3 (degrade existing visual character and quality) identified above in Section 4.18.2. However, the vast majority of the area disturbed by construction would eventually be occupied by project facilities (see *Operation and Maintenance* below), though some areas of disturbed soil surfaces (characterized by high color, line and texture contrasts) would still remain and would be visible from the various viewing vantage points. Revegetation of areas in this desert region are difficult and generally of limited success. Thus, visual recovery from residual land disturbance would likely occur only over a very long period of time and would require successful restoration as stipulated in Mitigation Measure VR-1. It is also anticipated that construction activity will take place at night. In order to ensure that significant construction lighting impacts do not occur, Mitigation Measure VR-2 has been recommended to reduce impacts associated with night lighting.

Operation and Maintenance

An analysis of operation and maintenance impacts was conducted for the view areas represented by the KOPs (Figure 4.18-1) selected for in-depth visual analysis. The results of the impact analysis are discussed below by KOP . A contrast rating analysis was conducted at each KOP to determine the level of change that would be caused by project implementation based on the Visual Resources Inventory (VRI) class ratings discussed in Chapter 3.19.

KOP 1 – Eastbound Interstate 8

Figure 4.18-2A presents the existing view from KOP 1 on eastbound I-8 where it splits from westbound I-8 at the base of Mountain Springs Grade. The view is to the north-northeast across the western portion of the Yuha Desert and captures the eastern portion of Site 1 backdropped by the Coyote Mountains. Figure 4.18-2B presents a visual simulation that depicts the addition of the proposed OWEF turbines. As shown in the simulation, the proposed OWEF would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the Southwest Powerlink (SWPL) transmission line is visible in the project area and will be joined in parallel by the Sunrise Powerlink (SRPL) transmission line, the lines will not appear as prominent as the OWEF turbines. Also, the turbines would cause partial view blockage of the background Coyote Mountains and Yuha Desert basin floor.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground, but the contrasting quality begins to dissipate in the background against the horizon. However, a strong contrast persists. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with transitions in vegetation, horizontal orientation of the basin floor, and the rolling horizontal orientation of the background topographic landforms. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green and tans within the foreground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground colors and diminishes to a moderate contrast against the middleground and background colors. The overall color contrast would be moderate. Similarly, the smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to horizontal and angular [Coyote Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon.

KOP 2 – Westbound Interstate 8

Figure 4.18-3A presents the existing view from KOP 2 on westbound I-8 west of the I-8 split at the base of Mountain Springs Grade. The view is to the northwest across the western portion of the Yuha Desert and captures the western portion of Site 1 backdropped by the Jacumba Mountains and Volcanic Hills in ABDSP. Figure 4.18-3B presents a visual simulation that depicts the addition of the proposed OWEF turbines. As shown in the simulation, the proposed OWEF would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines. Also, the turbines would cause partial view blockage of the background Volcanic Hills, Coyote Mountains, and Yuha Desert basin floor.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground, but the contrasting quality begins to dissipate in the background against the horizon. However, a strong contrast persists. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with transitions in vegetation, horizontal basin floor, and the rolling horizontal orientation of the background topographic landforms. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green and tans within the foreground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground colors and diminishes to a moderate contrast against the middleground and background colors. The overall color contrast would be moderate to strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to horizontal and angular [Volcanic Hills and Coyote Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon.

KOP 3 – Ocotillo Community Park

Figure 4.18-4A presents the existing view from KOP 3 in Ocotillo Community Park. The view is to the north and captures the northeastern portion of Site 1 backdropped by the Coyote Mountains. Figure 4.18-4B presents a visual simulation that depicts the addition of the proposed OWEF turbines. As shown in the simulation, the proposed OWEF would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines. Also, the turbines would cause partial view blockage of the background Coyote Mountains and Yuha Desert basin floor.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground to middleground landforms. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with transitions in vegetation, the horizontal orientation of the basin floor, and the rolling to irregular horizontal orientation of the background mountain range. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green and tans within the foreground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground to middleground earth-tone colors. The overall color contrast would be strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat horizontal [basin floor] to horizontal and angular [Coyote Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon.

KOP 4 – Southbound S2

Figure 4.18-5A presents the existing view from KOP 4 on southbound S2, approximately 1.2 miles southeast of the San Diego/Imperial County line, in western Imperial County. The view is to the south-southeast across the western portion of the Yuha Desert and captures the western portion of Site 1, west of the community of Ocotillo and east of the county line. The southeastern extent of the Jacumba Mountains and Jacumba Wilderness provide a backdrop of rugged, rocky mountain ridges. Figure 4.18-5B presents a visual simulation that depicts the addition of the proposed OWEF turbines. As shown in the simulation, the proposed OWEF would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines. Also, the turbines would cause substantial view blockage of the background Jacumba Mountains and Yuha Desert basin floor.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground, but the contrasting quality begins to dissipate in the background against the horizon. However, a strong contrast persists. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with transitions in vegetation, the horizontal orientation of the basin floor, and the rolling horizontal orientation of the background mountains. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green and tans within the foreground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground colors and diminishes to a moderate contrast against the middleground and background colors. The overall color contrast would be moderate to strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to horizontal and angular [Jacumba Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon.

KOP 5 – Mortero Palms Access – Anza-Borrego Desert State Park

Figure 4.18-6A presents the existing view from KOP 5 on the access road to the Mortero Palms and Dos Cabezas Primitive Camping Area in the southern end of ABDSP. The view is to the east and captures the majority of Site 1 in the western Yuha Desert, west and north of the community of Ocotillo and east of ABDSP. Figure 4.18-6B presents a visual simulation that depicts the addition of the proposed OWEF turbines. As shown in the simulation, the proposed OWEF would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is faintly visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines. Also, the turbines would cause partial view blockage of the background Coyote Mountains to the north and the Jacumba Mountains to the south. Substantial view blockage of the Yuha Desert basin floor would occur.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground to background landforms. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with transitions in vegetation, the horizontal orientation of the basin floor, and the rolling horizontal orientation of the surrounding mountain ranges. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green, tans, and browns within the foreground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground earth-tone colors. The overall color contrast would be moderate to strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to horizontal and angular [Coyote Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon, thus, attracting the attention of the casual observer.

KOP 6 – Red Hill – Anza-Borrego Desert State Park

Figure 4.18-7A presents the existing view from KOP 6 on the crest of Red Hill in the southern end of ABDSP. The view is to the east-southeast and captures the majority of Sites 1 and 2 in the western Yuha Desert, in the vicinity of the community of Ocotillo and east of ABDSP. Figure 4.18-7B presents a visual simulation that depicts the addition of the proposed OWEF turbines. As shown in the simulation, the proposed OWEF would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is faintly visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines. Also, from this vantage point, the turbines would cause partial view blockage of the background Jacumba Mountains to the south. Substantial view blockage of the western portion of the Yuha Desert basin floor would occur.

The form of the turbines within the foreground to middleground has a strong contrast rising out of the horizontal nature of the foreground to background landforms. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with the horizontal orientation of the basin floor and the rolling horizontal orientation of the foreground and background hills and mountains. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green, tans, and reddish hues within the foreground to middleground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground to middleground earth-tone colors and diminishes to a moderate contrast against the background colors. The overall color contrast would be moderate to strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape as viewed from ABDSP. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to rolling irregular [Volcanic Hills], and horizontal and angular [Coyote Mountains, Jacumba Mountains, and Sierra Cucapa Range] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, thus, attracting the attention of the casual observer.

Decommissioning

After the end of the project's useful life, it would require decommissioning. However, no Decommissioning Plan has been prepared. Even the complete removal of the facility would leave a very prominent visual impact over the entire site due to the strong color contrast created between graded, disturbed soil areas and undisturbed soil areas in the vicinity of the project site. In addition, revegetation in this desert region is difficult and generally of limited success. Thus, visual recovery from land disturbance of closure and decommissioning would likely occur only over a very long period of time. However, Mitigation Measure VR-1 is recommended to achieve site restoration to the extent feasible.

4.18.3.2 CEQA Significance Determinations

This analysis considered the potential impacts of the proposed project in relation to the four significance criteria for visual resource impacts listed in Appendix G of the CEQA Guidelines, under Aesthetics, and the three additional criteria presented in Section 4.18.2 above.

CEQA Criteria

- **Vis-1.** Although no designated scenic vistas were identified in the study area, panoramic and highly scenic vistas are available to backcountry recreationists that access the Volcanic Hills and Jacumba Mountains in ABDSP west of the project site, the Jacumba Mountains and Wilderness south of the project site, and the Coyote Mountains north of the project site. These areas overlook the western expanse of the Yuha Desert, which is ringed by distinguishable mountain ranges. As shown in Figures 4.18-7A and 7B for the representative KOP 6, the proposed OWEF turbines would be prominently visible from elevated vantage points in the area, and the introduction of industrial character and structural visual contrast would result in substantial adverse effects on these views. The resulting visual impact would be significant.

- **Vis-2.** The Yuha Desert basin floor consists primarily of desert scrub vegetation. The project site is located adjacent to I-8, which is not a designated State Scenic Highway. However, the portion of I-8 west of the eastbound-westbound split is listed as an eligible State Scenic Highway. There are no notable scenic features or historic structures located within the site. Therefore, the project would not substantially damage scenic resources such as trees, rock outcroppings, or historic buildings along a State Scenic Highway, and the resulting visual impact would be less than significant under this criterion.

- **Vis-3.** As discussed in Section 4.18.3.1 of this analysis, the proposed OWEF would introduce prominent structures with industrial character into the foreground to background views from I-8 (see KOPs 1 and 2), Ocotillo Community Park and portions of the community of Ocotillo (see KOP 3), S2 (see KOP 4), the southern portion of ABDSP (see KOPs 5 and 6), and elevated vantage points in the surrounding Coyote Mountains, Jacumba Mountains, and Volcanic Hills (see KOP 6). The resulting visual change would range from moderate-to-high, to high, resulting in a substantial degradation of the existing visual character or quality of the site and its surroundings. The resulting visual impact would be significant.

- **Vis-4.** OWEF is not expected to create a new source of substantial light that would adversely affect nighttime views in the area. Specifically, motion activated safety and security lighting is to be installed at the substation, interconnection switchyard, and O&M buildings. Therefore, significant night lighting impacts are not expected. However, Mitigation Measure VR-2 would ensure that significant night lighting impacts do not occur.

4.18.4 Alternative 2: 137 Wind Turbine Generators

4.18.4.1 Direct and Indirect Impacts

The direct and indirect impacts of Alternative 2 would be only slightly less than for Alternative 1 (Proposed Action) given the relatively small reduction in the number of proposed turbines.

Construction

Construction impacts resulting from Alternative 2 would be essentially the same as for Alternative 1. The reader is referred to Section 4.18.3.1 above for a complete discussion of the visual impacts that would be experienced during project construction.

Operation and Maintenance

Operation and maintenance impacts resulting from Alternative 2 would be essentially the same as for Alternative 1. KOP 6 on Red Hill in ABDSP was selected to document the impact of Alternative 2.

KOP 6 – Red Hill – Anza-Borrego Desert State Park

Figure 4.18-7A presents the existing view from KOP 6 on the crest of Red Hill in the southern end of ABDSP. The view is to the east-southeast and captures the majority of Sites 1 and 2 in the western Yuha Desert, in the vicinity of the community of Ocotillo and east of ABDSP. Figure 4.18-7B presents a visual simulation that depicts Alternative 1. Figure 4.18-7C presents a visual simulation that depicts Alternative 2. As shown in Figure 4.18-7C, Alternative 2 would eliminate a few proposed turbines from the northeast and northwest corners of Site 1 and four turbines from Site 2 (21 turbines in total). However, by comparing the Alternative 1 simulation (Figure 4.18-7B) and the Alternative 2 simulation (Figure 4.18-7C), it is clear that there would be minimal noticeable difference between the alternatives. Alternative 2 would still result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is faintly visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines of Alternative 2. Also, from this vantage point, the turbines would cause partial view blockage of the background Jacumba Mountains to the south. Substantial view blockage of the western portion of the Yuha Desert basin floor would occur.

The form of the turbines within the foreground to middleground has a strong contrast rising out of the horizontal nature of the foreground to middleground landforms. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with the horizontal orientation of the basin floor and the rolling horizontal orientation of the foreground and background hills and mountains. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green, tans, and reddish hues within the foreground to middleground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground to middleground earth-tone colors and diminishes to a moderate contrast against the background colors. The overall color contrast would be moderate to strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape as viewed from ABDSP. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to rolling irregular [Volcanic Hills], and horizontal and angular [Coyote Mountains, Jacumba Mountains, and Sierra Cucapa Range] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, thus, attracting the attention of the casual observer.

Decommissioning

Decommissioning impacts resulting from Alternative 2 would be essentially the same as for Alternative 1.

4.18.4.2 CEQA Significance Determinations

The impact significance determinations for Alternative 2 would be the same as for Alternative 1.

4.18.5 Alternative 3: 105 Wind Turbine Generators

4.18.5.1 Direct and Indirect Impacts

The direct and indirect impacts of Alternative 3 would be only slightly less than for Alternative 1 (Proposed Action), though there will be localized differences in the experience of visual impacts, particularly with respect to the northeast portion of Site 1 and all of Site 2. Specifically, Alternative 3 would prevent adverse and significant visual impacts from occurring in the northeast corner of Site 1, which is highly visible to residents of Ocotillo. Alternative 3 would also prevent adverse and significant visual impacts from occurring in Site 2, which is highly visible to residents of Nomirage and travelers on SR 98 and I-8. Alternative 3's elimination of proposed turbines from Site 2 would also be desirable in that it would reduce the apparent proliferation of structures that would be perceived by travelers on I-8 as they view turbines both north and south of the freeway under Alternative 1.

Construction

Construction impacts resulting from Alternative 3 would be essentially the same as for Alternative 1. The reader is referred to Section 4.18.3.1 above for a complete discussion of the visual impacts that would be experienced during project construction.

Operation and Maintenance

Operation and maintenance impacts resulting from Alternative 3 would be essentially the same as for Alternative 1. However, since the majority of the proposed turbine reductions would occur in the northeast corner of Site 1 and all of Site 2, views of those two areas would be most affected by Alternative 3. Therefore, two KOPs were established to evaluate the visual impacts of Alternative 3 on those locations. KOP 7 was established on S2 in the community of Ocotillo to evaluate the turbine reduction that would occur in the northeast corner of Site 1. KOP 8 was established on SR 98 at Mesquite Road in the vicinity of Nomirage, southeast of the community of Ocotillo to evaluate Alternative 3's elimination of turbines from Site 2.

KOP 7 – S2 in the Community of Ocotillo

Figure 4.18-8A presents the existing view from KOP 7 on S2 in the community of Ocotillo. The view is to the northeast and captures the northeastern portion of Site 1, which is partially backdropped by the southeastern extent of the Coyote Mountains. Figure 4.18-8B presents a visual simulation that depicts the addition of the Alternative 1 (Proposed Action) turbines. As shown in the simulation, the proposed OWEF Alternative 1 turbines would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the SWPL transmission line is visible in the project area and will be joined in parallel by the SRPL transmission line, the lines will not appear as prominent as the OWEF turbines. Also, the turbines would cause partial view blockage of the background Coyote Mountains and Yuha Desert basin floor.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground landform. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with transitions in vegetation and the horizontal orientation of the basin floor. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green, tans, and browns within the foreground to middleground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground earth-tone colors. The overall color contrast would be strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to horizontal and angular [Coyote Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon. This analysis is provided as a comparison for the result of Alternative 3, which would eliminate the turbines from this portion of Site 1. As a result, Alternative 3 would retain the existing setting shown in Figure 4.18-8A and would not cause an adverse visual change in this portion of Site 1, which would be visible to travelers on S2 and nearby residents in the community of Ocotillo.

KOP 8 – SR 98 at Mesquite Road near Nomirage

Figure 4.18-9A presents the existing view from KOP 8 on SR 98 at Mesquite Road in the community of Nomirage and southeast of the community of Ocotillo. The view is to the southwest and captures the majority of Site 2, which is backdropped by the rugged Jacumba Mountains and Wilderness. Figure 4.18-9B presents a visual simulation that depicts the addition of the Alternative 1 (Proposed Action) turbines. As shown in the simulation, the proposed OWEF Alternative 1 turbines would result in the introduction of visually prominent built structures into a landscape generally lacking similar built features of industrial or technological character. Although the landscape is punctuated by the occasional rural residence and a wood-pole utility line, these features do not appear as prominent as the OWEF turbines would appear. Also, the turbines would cause partial view blockage of the background Jacumba Mountains.

The form of the turbines within the foreground has a strong contrast rising out of the horizontal nature of the foreground to background landforms. The prominent vertical lines of the turbines also contrast with the general horizontal lines in the landscape associated with the horizontal orientation of the basin floor and the rolling horizontal orientation of the background mountain ranges. The resulting structural form and line contrast would be strong. The colors of the existing landscape are a blend of gray-green and tans within the foreground area, transitioning to shades of tans and grays in the background. The white color of the turbines creates a strong contrast against the foreground to background earth-tone colors. The overall color contrast would be strong. The smooth texture of the turbine and structural surfaces would result in a moderate contrast with the matte to granular textures of the natural landscape features. These contrasts would substantially degrade the existing visual character or quality of the site and its surrounding landscape. The new wind turbines with their prominent vertical structural forms and vertical (tower) to diagonal (blades) lines would not repeat the basic elements of the existing natural features in the landscape (simple, flat, horizontal [basin floor] to horizontal and angular [Jacumba Mountains] landforms). Also, the proposed structures would be prominent to dominant features in the landscape, which would be accentuated by the skylining that would occur where structures protrude above the horizon. This analysis is provided as a comparison for the result of Alternative 3, which would eliminate the turbines from Site 2. As a result, Alternative 3 would retain the existing setting shown in Figure 4.18-9A and would not cause an adverse visual change in Site 2, which would be visible to travelers on SR 98, I-8, and nearby residents in the communities of Nomirage and Ocotillo.

Decommissioning

Decommissioning impacts resulting from Alternative 3 would be essentially the same as for Alternative 1. The reader is referred to Section 4.18.3.1 above for a complete discussion of the visual impacts that would be experienced during project decommissioning.

4.18.5.2 CEQA Significance Determinations

The impact significance determinations for Alternative 3 would be the same as for Alternative 1. The reader is referred to Section 4.18.3.2 above for a complete discussion of the impact significance determinations. However, it should be pointed out that Alternative 3 would prevent adverse and significant visual impacts from occurring in the northeast corner of Site 1, which is highly visible to residents of the community of Ocotillo. Alternative 3 would also prevent adverse and significant visual impacts from occurring in Site 2, which is highly visible to residents of the community of Nomirage and travelers on SR 98 and I-8. Alternative 3's elimination of proposed turbines from Site 2 would also be desirable in that it would reduce the apparent proliferation of structures that would be perceived by travelers on I-8 as they view turbines both north and south of the freeway under Alternative 1.

4.18.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.18.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur, and existing conditions relevant to visual resources would continue. No impact would occur. However, similar impacts in the future could occur because different renewable projects could be built in this location or elsewhere in order to meet state mandates.

4.18.6.2 CEQA Significance Determinations

Alternative 4 would result in no impacts to visual resources because no changes to the existing landscape would occur.

4.18.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.18.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur, and no future development of the site for wind energy would occur. Existing conditions relevant to visual resources would continue but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. Although no impacts associated with the proposed OWEF would occur, similar impacts in the future could occur because different renewable projects could be built in this location or elsewhere in order to meet state mandates.

4.18.7.2 CEQA Significance Determinations

Alternative 5 would result in no impacts to visual resources.

4.18.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.18.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur, but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. However, in the future, if another wind development project is implemented, similar impacts to visual resources as those described for the proposed OWEF could occur. Also, similar impacts in the future could occur because different renewable projects could be built in this location or elsewhere in order to meet state mandates.

4.18.8.2 Impact Significance Determinations

Alternative 6 would result in no impacts to visual resources.

4.18.9 Cumulative Impacts

Under CEQA, a project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (California Code Regulation, Title 14, section 15130). This concept is similar to NEPA, which states that cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7). Cumulative effects could result from the construction, operation and maintenance, and decommissioning phases of a project.

Cumulative impacts to visual resources would occur where project facilities or activities occupy the same field of view as other built facilities or impacted landscapes, and an adverse change in the visible landscape character is perceived. A cumulative impact could also occur if a viewer perceives that the general visual quality or landscape character of a localized or regional area (I-8 corridor or southern Imperial Valley) is diminished by the proliferation of visible similar structures or construction effects, even if the changes are not within the same field of view as existing (or future) structures or facilities. The result is a perceived "industrialization" or "urbanization" of the existing rural or undeveloped landscape character.

There is the potential for substantial future development along the I-8 corridor and in the southern Imperial Valley. A list of the existing and reasonably foreseeable cumulative projects is provided in Table 4.1-1 and shown on Figures 4.1-1a/b.

4.18.9.1 Geographic Extent/Context

Cumulative impacts to visual resources could occur if implementation of OWEF would combine with those of other local or regional projects. OWEF is potentially associated with two types of cumulative impacts:

- Local cumulative impacts within the immediate project viewshed (local projects within 15 miles of OWEF), including existing and reasonably foreseeable future projects in the western Yuha Desert basin and the nearby stretches of I-8, SR98, and S2; and
- Regional cumulative impacts beyond the immediate project viewshed, including the existing and reasonably foreseeable future solar and other energy and development projects: (a) along the I-8 corridor (generally extending west to Cottonwood Valley and east through the southern Imperial Valley) and (b) in southern Imperial Valley (generally south of Brawley), particularly in the vicinity of El Centro. These projects, while not located within the same field of view as the proposed OWEF would, in combination with OWEF, contribute to a sense of industrialization or urbanization of the existing landscape character as travelers travel along I-8 and pass through the southern Imperial Valley.

4.18.9.2 Existing Cumulative Conditions

This section identifies the past and present projects and actions that have affected and will continue to affect landscape character in the local and regional cumulative study areas described above. There has been limited development and/or industrialization of the project landscape within OWEF's viewshed (extending out approximately 15 miles). Three existing cumulative projects within a reasonable viewing distance of approximately six miles of OWEF (locally cumulative projects) include:

- Southwest Powerlink 500-kV Transmission Line
- Sunrise Powerlink 500-kV Transmission Line (under construction)
- Interstate 8

The first two projects share similar industrial characteristics with the proposed OWEF and would be visible within the same field of view as the OWEF. The SWPL and SRPL in conjunction with OWEF contribute to the conversion of natural desert landscapes to landscapes with prominent industrial character (complex industrial forms and lines and surface textures and colors not found in natural desert landscapes). Therefore, there would be combined effects on visual resources from the combination of the OWEF and these two projects, both individually (each project plus OWEF) and collectively (all three projects). The third project, Interstate 8, is visible as a linear, horizontal feature in the landscape but does not possess industrial character (complex forms or lines) on the scale of an energy facility such as the OWEF. Therefore, there would not be a cumulatively considerable impact on visual resources from the combination of the OWEF and Interstate 8.

Additionally, the existing wind energy development along Tecate Divide, the Acorn Casino, and the Border Patrol facility near Cameron Valley also contribute to a cumulative sense of urbanization and industrialization along the I-8 corridor. Therefore, the OWEF and these three existing projects would each contribute to cumulative impacts on the visual resources and landscapes along the I-8 corridor.

4.18.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within Imperial County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR. Six locally cumulative projects that would be within the viewshed of the proposed OWEF include:

- Imperial Valley Solar – Solar Two Energy Project
- Mount Signal Solar Farm
- Centinela Solar Energy Project
- Coyote Wells Specific Plan
- Imperial Solar Energy Center West
- Imperial Solar Energy Center South

The five energy projects would exhibit industrial characteristics and levels of visual contrast similar to the proposed OWEF. However, because the OWEF is a wind energy project and the others are solar energy projects, their visual characteristics differ in some ways. Most notably, wind turbines are much taller structures than solar arrays and, therefore, can be visible from greater distances. The one residential development would contribute to the sense of development of the immediate project vicinity but would not share similar industrial characteristics (complex forms and lines) or visual contrast.

On a regional scale, eleven cumulative projects would, along with the OWEF, contribute to the sense of industrialization of the landscape along the I-8 corridor and in the southern Imperial Valley and would contribute to the conversion of natural desert landscapes to landscapes with prominent industrial character. These projects would exhibit industrial characteristics and visual contrast similar to the OWEF and would include:

- ESJ Wind Project I
- ESJ Wind Project II
- Debenham Energy Wind Energy Project
- National Quarries Wind Energy Project
- Ram Power, Inc. Geothermal Overlay
- Renewergy LLC Wind Energy Project
- Tule Wind Project and ECO Substation
- La Posta Casino
- Boulevard Border Patrol Station
- Bethel Solar X Energy Project
- Pacific Bell Cell Site

Seven additional residential projects would also contribute to the sense of regional urbanization along the I-8 corridor and within the southern Imperial Valley, though they would not exhibit industrial characteristics (complex forms and lines) and visual contrast similar to the OWEF. The seven projects would include:

- Brookfield 101 Ranch Specific Plan
- Rancho Los Lagos Specific Plan
- Coyote Wells Specific Plan
- Ketchum Ranch – TM
- Elder – TPM
- Dart – TPM
- Grizzle – TPM

4.18.9.4 Construction

If construction at the six locally cumulative project locations were to occur at the same time as, or consecutively before or after, construction of the proposed OWEF, construction activities, equipment and night lighting from these sites would combine with similar activities and equipment from the OWEF site. Construction of the proposed OWEF and the other cumulative projects in the immediate project vicinity would lead to the continued presence of construction equipment on roads and in the landscape in the local project region for several years and cause a substantial cumulative visual impact.

4.18.9.5 Operation and Maintenance

Local Cumulative Area

Industrial projects with highly visible, large and/or complex structural elements differ from ground-level projects in terms of their potential visibility and their visual character. There are several cumulative energy infrastructure projects that would exhibit many of the same characteristics as the proposed OWEF and would be within the same field of view as the proposed OWEF. These projects would exhibit similar structural form, structural complexity, and industrial character and visual contrast as the proposed OWEF, although the wind turbines introduced by the OWEF would be taller and more visually prominent than the other projects. The projects include:

- Imperial Valley Solar – Solar Two Energy Project
- Mount Signal Solar Farm
- Centinela Solar Energy Project
- Sunrise Powerlink Project (existing)
- Southwest Powerlink Project (existing)
- Imperial Solar Energy Center West
- Imperial Solar Energy Center South

A substantial increase in industrial character, structure prominence, and view blockage would occur in the vicinity of the project with implementation of the proposed OWEF and seven other locally cumulative projects (two of which are existing). The proposed OWEF would exhibit discrete but prominent vertical forms and lines similar to the two existing transmission line projects. While the proposed OWEF's discrete but prominent vertical forms and lines would differ from the more broadly horizontal forms and lines of a solar project, both types of projects would exhibit built industrial character and smooth industrial surfaces and colors. Additionally, the solar projects would cause greater degrees of glint and glare compared to the OWEF. In each case, the proposed OWEF and the cumulative projects combined would result in a perceived increase in industrialization of the landscape, diminution of visual quality, and increase in visual contrast. The resulting visual impact would be cumulatively considerable.

Regional Cumulative Area

The cumulative contribution of the proposed OWEF must also be considered within the context of reasonably foreseeable projects within the larger contexts of the I-8 corridor and the southern Imperial Valley. The eleven reasonably foreseeable projects along the I-8 corridor and in the southern Imperial Valley identified above in Section 4.18.9.3 would contribute to the sense of industrialization of the desert landscape as one drives between San Diego and El Centro or Arizona beyond.

All 12 projects (OWEF plus the eleven reasonably foreseeable projects) would contribute to the conversion of natural desert landscapes to landscapes with prominent industrial character (complex industrial forms and lines and surface textures and colors not found in natural desert landscapes). Therefore, there would be a substantial cumulative impact to visual resources from the combination of the proposed OWEF and the eleven foreseeable projects listed above, both individually (each project plus the OWEF) and collectively (all eleven projects plus the OWEF).

4.18.9.6 Decommissioning

Cumulative impacts associated with decommissioning of the OWEF or an alternative would include the removal and disposal of turbine towers, aboveground electrical tower components, and substation components, as well as the removal of all belowground infrastructure to three feet below the ground surface. Restoration of the OWEF site would include returning the area as close as reasonably possible to pre-construction conditions suitable for current adjacent land. However, following removal of the facility, a strong color contrast associated with vegetation removal and disturbed soils would remain. In addition, revegetation in a desert region is difficult and generally is of limited success. Thus, visual recovery from land disturbance of closure and decommissioning would likely occur only over a very long period of time, and significant visual impacts would likely remain. However, Mitigation Measure VR-1 is recommended to achieve site restoration to the extent feasible. Therefore, decommissioning and restoration would not eliminate the OWEF's contribution to local and regional cumulative impacts on visual resources, and adverse and cumulatively considerable effects would occur.

4.18.9.7 Impact Significance Determinations

The proposed OWEF's contribution to the visible industrialization of the desert landscape would constitute a significant visual impact when considered in the context of existing cumulative conditions and reasonably foreseeable projects, both within the immediate project viewshed and in a broader context that encompasses the I-8 corridor and the southern Imperial Valley.

CEQA Criteria

- **Vis-1.** Although no designated scenic vistas were identified in the study area, panoramic and highly scenic vistas are available to backcountry recreationists that access the Volcanic Hills and Jacumba Mountains in ABDSP west of the project site, the Jacumba Mountains and Wilderness south of the project site, and the Coyote Mountains north of the project site. These areas overlook the western expanse of the Yuha Desert, which is ringed by distinguishable mountain ranges. The proposed OWEF turbines would be prominently visible in the same field of view as the existing SWPL and the SRPL transmission lines (existing cumulative conditions), and the introduction of industrial character and structural visual contrast would result in substantial adverse effects on these views. The resulting cumulative visual impact would be significant and unavoidable. The proposed OWEF would also be visible in the same field of view as the locally cumulative reasonably foreseeable projects identified in the previous section. The proposed OWEF plus the reasonably foreseeable projects would contribute to the conversion of natural desert landscapes to landscapes with prominent industrial character (complex industrial forms and lines and surface textures and colors not found in natural desert landscapes). Therefore, there would be a cumulatively considerable impact to the surrounding vistas individually (each project plus the OWEF) and collectively (all locally cumulative projects plus the OWEF). Again, the resulting cumulative visual impact would be significant and unavoidable.

- **Vis-2.** The Yuha Desert basin floor consists primarily of desert scrub vegetation. The project site is located adjacent to I-8, which is not a designated State Scenic Highway. However, the portion of I-8 west of the eastbound-westbound split is listed as an eligible State Scenic Highway. There are no notable scenic features or historic structures located within the site. Therefore, the project in conjunction with either existing or reasonably foreseeable cumulative projects would not substantially damage scenic resources such as trees, rock outcroppings, or historic buildings within a State Scenic Highway. The resulting cumulative visual impact would not be significant.

- **Vis-3.** The proposed OWEF, in conjunction with both the existing and reasonably foreseeable cumulative projects, would introduce prominent structures with industrial character into the foreground to background views from I-8 (KOPs 1 and 2), the community of Ocotillo (KOPs 3 and 7), S2 (KOP 4), ABDSP (KOPs 5 and 6), and SR 98 and the community of Nomirage (KOP 8). The resulting visual change would substantially degrade the existing visual character or quality of the site and its surroundings. The resulting cumulatively considerable visual impact would be significant and unavoidable.

- **Vis-4.** The proposed OWEF, in conjunction with both existing and reasonably foreseeable cumulative projects, is not expected to create a new source of substantial light that would adversely affect nighttime views in the area. Specifically, motion activated safety and security lighting is proposed to be installed at the substation, interconnection switchyard, and O&M buildings, and cumulatively considerable night lighting visual impacts are not anticipated. However, Mitigation Measure VR-2 would ensure that significant night lighting impacts do not occur.

4.18.10 Mitigation Measures

VR-1 The Applicant shall revegetate disturbed soil. In order to specifically address visual concerns, the Decommissioning and Restoration plans shall include reclamation of the area of disturbed soils used for laydown, project construction, and siting of the other ancillary operation and support structures. Revegetation shall re-establish the pre-existing colors, textures, and form to the landscape and visually integrate into the adjacent edges removing the lines of demarcation.

VR-2 The Applicant shall design and install all permanent exterior lighting and all temporary construction lighting such that: (a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; (b) lighting does not cause excessive reflected glare; (c) direct lighting does not illuminate the nighttime sky, except for required Federal Aviation Administration (FAA) aircraft safety lighting (which may be an on-demand, audio-visual warning system that is triggered by radar technology if it is approved by the FAA for use on wind turbines); (d) illumination of the project and its immediate vicinity is minimized; and (e) the plan complies with local policies and ordinances. The Applicant shall submit to the BLM and Imperial County for review and approval a lighting mitigation plan that includes the following:

- Location and direction of light fixtures that take the lighting mitigation requirements into account;
- Lighting design that considers setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;
- Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;
- Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;
- All lighting shall be of minimum necessary brightness consistent with operational safety and security; and
- Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

VR-3 **Reduce visual contrast associated with substation and ancillary facilities**. The project applicant shall submit to the appropriate land use jurisdiction agency a Surface Treatment Plan describing the application of colors and textures to all new facility structure buildings, walls, fences, and components comprising all ancillary facilities including substations. The Surface Treatment Plan must reduce glare and minimize visual intrusion and contrast by blending the facilities with the landscape. The Surface Treatment Plan shall be submitted to the appropriate land use jurisdiction agency for approval at least 90 days prior to either: (a) ordering the first structures that are to be color treated during manufacture; or (b) construction of any of the ancillary facility components, whichever comes first. If the appropriate land use jurisdiction agency notifies the project applicant that revisions to the Plan are needed before the Plan can be approved, within 30 days of receiving that notification, the project applicant shall prepare and submit for review and approval a revised Surface Treatment Plan. The Surface Treatment Plan shall include:

- Specification and 11” × 17” color simulations at life-size scale of the treatment proposed for use on project structures, including structures treated during manufacture
- A list of each major project structure, building, tower and/or pole, and fencing specifying the color(s) and finish proposed for each (colors must be identified by name and by vendor brand or a universal designation)
- Two sets of brochures and/or color chips for each proposed color
- A detailed schedule for completion of the treatment
- Procedures to ensure proper treatment maintenance for the life of the project.

The project Applicant shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated on site, until project applicants receive notification of approval of the Surface Treatment Plan by the appropriate land use jurisdiction agency. Within 30 days following the start of commercial operation, the project applicant shall notify the appropriate land use jurisdiction agency that all buildings and structures are ready for inspection.

VR-4 **Screen substations and ancillary facilities.** The project applicant shall provide a Screening Plan for screening vegetation, walls, and fences that reduces visibility of ancillary facilities and helps the facility blend in with the landscape. The use of berms to facilitate project screening may also be incorporated into the Screening Plan. The project applicant shall submit the Plan to the appropriate land use jurisdiction agency for review and approval at least 90 days prior to installing the landscape screening. If the appropriate land use jurisdiction agency notifies the project applicant that revisions to the Screening Plan are needed before the Plan can be approved, within 30 days of receiving that notification.

VR-5 **Reduce potential visual contrast of transmission structures**. The project applicant will use dulled metal finish transmission structures and non-specular conductors.

VR-6 **Reduce potential transmission conductor visibility and visual contrast.** The following design measures shall be applied to all new structure locations, conductors, and re-conductored spans to reduce the degree of visual contrast caused by the new facilities:

- All new conductors and re-conductored spans will be non-specular in design to reduce conductor visibility and visual contrast.
- Where revisions would not conflict with existing design considerations to avoid sensitive resources (including hydrological, cultural, and biological resources), no new access roads shall be constructed such that they directly approach existing or proposed towers in a straight line from sensitive viewing locations immediately downhill of the structures.

VR-7 **Reduce potential visual contrast from transmission structure spacing.** Where the line parallels existing transmission lines, the spacing of structures shall match the existing transmission structures, where feasible, to minimize visual effects.

VR-8 **Reduce potential view blockage and visual contrasts of structures.** Transmission line structures will not be installed directly in front of residences or in direct line-of-sight from a residence where feasible. The project Applicant will consult with affected property owners on structure siting to reduce land use and visual impacts.

4.18.11 Residual Impacts After Mitigation

Land scarring and vegetation clearance. It is expected that even with effective implementation of Mitigation Measure VR-1, the residual impacts associated with land scarring and vegetation clearance would remain for several years given the difficulty of successful revegetation in an arid environment. This would result in an unavoidable, long-term, adverse impact to visual resources.

Night lighting. The proposed OWEF, in conjunction with both existing and reasonably foreseeable cumulative projects, is not expected to create a new source of substantial light that would adversely affect nighttime views in the area. Specifically, motion activated safety and security lighting is to be installed at the substation, interconnection switchyard, and O&M buildings. Furthermore, the effective implementation of the lighting control steps contained in Mitigation Measure VR-2 would ensure that night lighting impacts are reduced to the degree feasible.

4.19 Water Resources

4.19.1 Methodology for Analysis

This section describes effects on water resources that would be caused by implementation of the proposed OWEF, or "Proposed Action," and alternatives. The following discussion addresses potential environmental impacts associated with implementation of the Proposed Action and recommends measures to reduce or avoid adverse impacts anticipated from construction, operation, and decommissioning of the proposed OWEF and alternatives. A discussion of cumulative impacts related to water resources is also included in this section. Impacts to water resources were identified based on the predicted interaction between construction, operation, and decommissioning and the environmental setting.

This analysis first established baseline conditions for the environmental setting relevant to water resources, presented in Section 3.20 of this EIS/EIR. These baseline conditions were evaluated based on their potential to be affected by construction activities, operation and maintenance activities, and decommissioning of the Proposed Action and/or an alternative. Construction, operation, and maintenance activities were identified based on analysis provided in the Applicant's Plan of Development (OE, 2010), as discussed in Chapter 2 of this EIS/EIR.

4.19.2 CEQA Significance Criteria

The criteria listed below were used to determine the significance of impacts to water resources of the proposed OWEF pursuant to CEQA. These indicators are the same as the significance criteria for hydrology and water quality listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines.

WR-1 *Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality;*

WR-2 *Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);*

WR-3 *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on site or off site;*

WR-4 *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on site or off site;*

WR-5 *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;*

WR-6 *Otherwise substantially degrade water quality;*

WR-7 *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;*

WR-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

WR-9 Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam;

WR-10 Inundation by seiche, tsunami, or mudflow.

For the OWEF, the criteria numbered WR-7 and WR-9 were determined to be inapplicable or would result in no impact and, therefore, are not addressed further in the impact analysis presented in this section. Regarding housing (Significance Criterion WR-7), the OWEF does not include the construction of any residential units, and would not introduce new housing to the area. Regarding flooding impacts associated with the failure of a levee or dam (Significance Criterion WR-9), there are no levees or dams located within proximity to the OWEF site such that flooding hazards from possible failure would occur; potential impacts associated with flooding would be addressed under the fourth significance criterion listed above. In addition, the OWEF site is not located within proximity to a body of water that could result in a seiche or tsunami such that inundation hazards would be introduced; therefore, in addressing potential impacts under Significance Criterion WR-10, only the potential for inundation by mudflow is discussed.

4.19.3 Alternative 1: Proposed Action

4.19.3.1 Direct and Indirect Impacts

This analysis of direct and indirect impacts of the Proposed Action is organized according to the project's construction, operation and maintenance, and decommissioning phases, except where potential effects would be the same across all three phases, as would occur with respect to permitting compliance and water supply reliability for some of the identified water sources. All phases of the proposed OWEF would occur in compliance with applicable water quality standards and waste discharge requirements, as presented in Section 3.20.2 of this EIS/EIR. Key standards and requirements relevant to water resources impacts of the Proposed Action include but are not limited to those listed below.

- Streambed Alteration Agreement from the California Department of Fish and Game (CDFG)
- Clean Water Act Section 404 permit from the United States Army Corps of Engineers (ACOE)
- Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction activities, including a Stormwater Pollution Prevention Plan (SWPPP) with Best Management Practices (BMPs) for stormwater management
- Clean Water Act Section 401 certification from the Colorado River Basin Regional Water Quality Control Board (RWQCB)

Mitigation Measure Water-1 (*Demonstrate Compliance with Water Quality Permits*), presented below in Section 4.19.10 (Mitigation Measures), requires the Applicant to demonstrate compliance with all applicable permitting requirements prior commencing construction, which will ensure that all phases of the proposed OWEF occur in compliance with applicable water quality permits and waste discharge requirements.

Potential water sources for the Proposed Action are described in Section 3.20, and include the following: Pine Valley groundwater; City of Brawley (treated municipal water); Seeley County Water District (treated municipal water); Vulcan Materials (Dixieland Mine groundwater supply well); and the IID West-Side Canal (Colorado River water). Of these potential water sources, two would provided treated municipal water (City of Brawley and Seeley County Water District), one would provide Colorado River water (IID West Side Canal), and two would pump groundwater for the project (Pine Valley and Dixieland Mine). Water supply reliability associated with the City of Brawley source, the Seeley County Water District source, and the IID source is managed through existing plans and policies, which are described in the following bulleted discussion. Groundwater that would be provided by the Vulcan Materials Dixieland Mine would be pumped from a non-adjudicated area (discussed below), but would occur within the constraints of an existing Conditional Use Permit (CUP) which restricts annual groundwater pumpage to 200 afy. Use of the Dixieland Mine source for the proposed OWEF would not alter the quantity of groundwater to be pumped from this well on an annual basis; total uses would continue to be subject to the CUP's constraint of 200 afy and use of this source for the project would therefore represent the persistence of existing conditions relevant to groundwater pumping from this site. In comparison, use of the identified private groundwater well in Pine Valley to meet the project's water requirements would not be subject to an existing maximum usage requirement such as is applicable to the Dixieland Mine well, and use of the Pine Valley source would therefore not represent the persistence of existing conditions. Existing plans and permits applicable to each of the potential water sources for the project are discussed below.

- **City of Brawley - treated municipal water.** The City of Brawley has confirmed in writing to the project Applicant that the city is able to provide 250,000 gallons per day of water for the proposed OWEF, for the period commencing December 2011 through December 2012 (City of Brawley, 2011). Assuming that water would be delivered six days per week to coincide with the proposed construction schedule, this equates to water delivery of 0.767 acre-feet per day, or approximately 250 acre-feet over the proposed year. As described in Section 2.1.3 (see "Water/Wastewater"), approximately 50 acre-feet of water will be needed for construction of the proposed OWEF. The amount of water available from the City of Brawley would be sufficient to meet water supply requirements of the proposed OWEF. In addition, the proposed OWEF may include use of either one temporary pond or up to ten 12,000-gallon temporary water storage tanks (see discussion below under "Surface Water and Drainage Patterns"); water delivered from the City of Brawley supply may be stored in these facilities as needed to meet project requirements.

  Water obtained from the City of Brawley would be treated municipal wastewater; as described in the City's existing UWMP, the water treatment plant has a capacity of treating 16,800 acre-feet per year (afy), with a capability of expanding to 33,600 afy (City of Brawley, 2010). In addition, as described in Section 3.20, any delivery of water by the City of Brawley for use at the proposed OWEF site would occur in compliance with the city's existing UWMP, which assesses current water demands and supplies over a 20-year planning horizon under various drought scenarios (per California Water Code §10612(b)), and provides water supply management direction for the 20-year planning horizon. Use of treated municipal water from the City of Brawley for the proposed OWEF would be consistent with the UWMP, and would not result in adverse impacts to the water supply or to water supply availability.

- **SCWD – treated municipal wastewater.** As with the City of Brawley source described above, the Seeley County Water District water supply would be provided in the form of treated municipal water. As described in Section 3.22, there is no UWMP for this water supply, but the SCWD does implement demand management measures (DDMs) published by the California Urban Water Conservation Council (CUWCC) and supported by DWR, which are typlically included as part of an UWMP (IID, 2009). The SCWD's Seeley County Wastewater Treatment Plant (WWTP) has sufficient capacity to meet the water supply requirements of the proposed OWEF. Use of treated municipal water from the SCWD for the proposed OWEF would not result in adverse impacts to the water supply or to water supply availability.

- **Vulcan Materials – Dixieland Mine groundwater supply well.** The Dixieland Mine groundwater supply well is used to pump water for dust control and product washing at the Dixieland Mine site, in accordance with a Conditional Use Permit (CUP) from Imperial County authorizing such uses up to 200 afy. If the Dixieland Mine well is used to meet the proposed OWEF water requirements, the CUP for the well would need to be revised by the county because it does not currently authorize use of this water for the OWEF; however, adding the OWEF to the authorized uses of the well would not require an increase in the quantity of water authorized for consumption, which is expected to remain at 200 afy.

  As described in Section 3.20.1.2 (see "Dixieland Mine Groundwater"), the existing Dixieland Mine groundwater supply well is capable of producing at least 325 gpm to 350 gpm, with very little drawdown in the surrounding aquifer; this production rate is more than adequate to meet the 200 afy of withdrawal authorized by the CUP. The groundwater investigation that was conducted at the Dixieland Mine site prior to installation of the well determined that pumping up to 200 afy of groundwater from this location would not have any impacts on other groundwater wells, on the groundwater basin, or on other water users in the vicinity (EMKO, 2005). The 200 afy of groundwater use authorized under the CUP for the Dixieland Mine site would be sufficient to meet the project's water requirements, and compliance with a revised CUP would avoid potential adverse impacts to the water supply and water supply reliability.

  Groundwater pumped from the Dixieland Mine site is high in TDS concentrations, and would need to be treated prior to use at the OWEF site, particularly for mixing concrete. The Dixieland Mine site is currently equipped with a Reverse Osmosis (RO) system and evaporation ponds; it is anticipated that if this water supply is used for the proposed OWEF, the Dixieland Mine RO system and evaporation ponds would be used to reduce TDS concentrations in the water prior to transporting it (via truck) to the proposed OWEF site.

- **IID – West-Side Canal water.** As described in Section 3.20, water may be purchased from the IID and transported by truck from the IID West-Side Canal. IID has indicated to the project Applicant that approximately 25 afy of canal water may be obtained for the proposed OWEF through the Interim Water Supply Policy for Non-Agricultural Projects, which is also discussed in Section 3.20. The IID Board of Directors adopted a Strategic Plan in 2008 which included an objective to develop an integrated water resources plan by the end of 2009, adopt recommendations outlined in the plan in the first quarter of 2010, and implement the actions by mid-year 2010 (IID, 2009a). The purpose of the Integrated Water Resources Management Plan (IID Plan) is to address the changing water needs of the community and provide water for economic development while meeting its agricultural water needs and complying with existing agreements and regulations (IID, 2009a). The Draft Final IID Plan, dated September 21, 2009, describes immediate (2010), near-term (2011 – 2015), mid-term (2016 – 2020), and long-term (2021 – 2047) actions to be implemented over a 37-year planning horizon (IID, 2009b). The IID Plan addresses the entire IID service area, including the Proposed Action site, and includes a thorough analysis of future water supply and demand requirements, including increasing water demands associated with projects such as the Proposed Action. The IID Plan is currently in draft form and is not considered an UWMP because it has not yet been adopted and no implementation activities are contained within the IID Plan. If IID West-Side Canal water is used for the proposed OWEF, compliance with the IID's transfer agreement, Interim Water Supply Policy, and pending IID Plan would ensure that no adverse impacts to the water supply or water supply reliability would occur.

As mentioned, Pine Valley groundwater has also be identified as a potential source for the project; however, this source is not subject to maximum groundwater pumping restrictions per an existing plan or permit and therefore use of this source could result in impacts to water supply and reliability that would be avoided by the plans and/or permits associated with other potential water sources. As described in Section 3.20, use of the Pine Valley groundwater source is subject to the Nonconformity Regulations of the San Diego County Zoning Ordinance §6852. Accordingly, if more than 28 afy of water is exported from this well, then a Major Use Permit from the County of San Diego would be required. It is understood that the Major Use Permit would address the use of Pine Valley groundwater on a site that does not overlie the affected groundwater resource; it may also address a maximum quantity of groundwater that may be pumped from the Pine Valley well, but at the time of preparation of this Final EIS/EIR the specifics of the Major Use Permit requirements are not known. Therefore it is assumed that the Pine Valley groundwater source would not be subject to the same pumping restrictions as the Dixieland Mine groundwater source. As a result, the analysis of potential water supply impacts presented in this section is focused on the Pine Valley groundwater source more than other potential sources which, as described above, are managed under existing plans and/or permits.

All potential water sources identified for the OWEF, as discussed above and introduced in Section 3.20 are referenced as applicable throughout the following analysis of potential impacts of the proposed OWEF.

Construction

Construction of the proposed OWEF would require a water supply for concrete batching, road maintenance, and dust suppression; water required for dust suppression would be minimal due to the use of MgCl as a soil binder (see Section 2.1.3.5). Table 4.19-1 provides a summary of construction water requirements, based on data provided in Section 1.3.9 (Water Usage, Amounts, Sources (During Construction and Operations)) of the Plan of Development for the proposed OWEF.

Table 4.19-1. Construction Water Requirements for the Proposed OWEF

Water Requirement	Gallons	Acre-Feet
Concrete Foundations	2,118,034.3	6.5
Road Maintenance and Dust Suppression	14,174,537.1	43.5
TOTAL	**16,292,571.4**	**50**

Source: OE, 2010

Approximately 50 acre-feet of water would be required over the project's construction period, to be obtained from one or more of the potential water sources described above (Pine Valley; City of Brawley; Seeley County Water District; Vulcan Materials Dixieland Mine groundwater; IID West-Side Canal). Also as described above, with the exception of the Pine Valley source, each potential water source identified for the project is managed per existing plans and/or permits. Use of one or more of these potential sources to meet the project's water supply requirements would not result in substantial adverse effects because such use would occur in compliance with existing plans and/or permits that are implemented to avoid adverse effects and ensure water supply reliability. Therefore, in order to be conservative in assessing potential impacts of OWEF associated with the project's water source, it is assumed that all project water would be obtained from the private groundwater well located in Pine Valley.

Potable water would also be required for construction workers, and would be transported to the construction area from an off-site commercial bottled water provider. Temporary portable toilet facilities would be provided for sanitary purposes during construction.

Groundwater Supply and Recharge

Construction of the proposed OWEF could affect groundwater supply and recharge if one of the following occurs: (1) the affected groundwater basin is currently characterized by long-term overdraft conditions; (2) construction activities result in long-term overdraft conditions; (3) substantial drawdown occurs at groundwater wells in the area as a result of construction groundwater pumping; or (4) construction activities redirect natural recharge to groundwater basin(s), such as through the introduction of impervious areas that prevent infiltration. Each of these potential conditions is discussed below.

Overdraft and Drawdown. Groundwater overdraft occurs when the quantity of water removed from a groundwater basin exceeds the rate of recharge to that basin; this effect may be long-term, where substantial permanent new groundwater demands are introduced, or this effect may be short-term and seasonal, where new groundwater demand(s) are introduced but are temporary, such that the existing balance of groundwater removal and recharge is restored once the new demand(s) ceases. Drawdown occurs when groundwater pumping at one well lowers the aquifer level such that other wells in the vicinity experience an increased depth to groundwater, requiring greater energy to draw the same volume of water from affected wells. Overdraft and drawdown conditions can be temporary and of varying duration, depending upon the intensity and duration of activities which cause such conditions to occur; for example, the introduction of intensive pumping activities at an existing well may cause localized overdraft conditions and/or drawdown effects, and such effects would cease to occur once the intensive pumping also ceases. Section 3.20 provides a detailed discussion of existing conditions relevant to overdraft.

- Ocotillo-Coyote Wells SSA. Section 3.20.1.2 (Groundwater) describes that the Coyote Wells Valley Groundwater Basin, which underlies the proposed OWEF site within the surface area of the Ocotillo-Coyote Wells Sole Source Aquifer (SSA), is currently in a state of long-term overdraft. Due to these existing overdraft conditions, groundwater withdrawal from this basin would exacerbate overdraft conditions. As described above and in Section 3.20, the Vulcan Materials Dixieland Mine groundwater supply well has been identified as a potential water source for the project. Section 3.20.1.2 states under "Dixieland Mine Groundwater" that this potential source is located along the eastern border of the Coyote Wells Valley Groundwater Basin. However, as described above, in the introduction to this analysis, use of groundwater pumped from the Dixieland Mine well would be subject to the restrictions of an existing CUP, which would ensure that no change in existing groundwater usage rates from this well would occur as a result of the project. Therefore, the proposed OWEF would introduce no new uses of groundwater from the Coyote Wells Valley Groundwater Basin, and the proposed OWEF would have no effect on overdraft and/or drawdown conditions in this basin.

- Campo-Cottonwood SSA. Campo-Cottonwood SSA. As discussed above, this analysis of potential water supply impacts focuses on the Pine Valley groundwater source in order to be conservative in characterizing potential impacts, as the other potential sources are managed under existing plans and/or permits to avoid adverse effects. Therefore, for the purposes of this analysis, it is assumed that water for construction of the proposed OWEF would be obtained from a private well in the Pine Valley area of eastern San Diego County, within the surface recharge area of the Campo-Cottonwood SSA. As described in Section 3.20.1.1 under "Campo-Cottonwood Sole Source Aquifer," based on anecdotal evidence and known historical use of Pine Valley groundwater, it is reasonably assumed that the Pine Valley area is currently not affected by overdraft conditions. Due to a lack of long-term quantitative groundwater data reflecting groundwater behavior in response to pumping, it is possible that use of Pine Valley groundwater to meet water requirements during OWEF construction could result in overdraft conditions. However, groundwater pumping for construction would be short-term and limited specifically to the construction period of 12 to 15 months (see Section 2.1.3.2); therefore, the proposed OWEF would not have the potential to result in long-term overdraft. The potential for short-term overdraft conditions to occur as a result of the proposed OWEF would be addressed with groundwater monitoring activities required per mitigation measures summarized below and presented in detail in Section 4.19.10. Any potential overdraft resulting from the proposed OWEF would be temporary. In addition, due to the nature of short-term overdraft conditions which occur in response to a particular action or actions, the original (baseline) balance of the groundwater system would return once the overdraft-inducing action(s) ceases. Therefore, if the proposed OWEF results in short-term overdraft conditions, this effect would be reversed by ceasing project pumping, per mitigation requirements discussed below. Use of Pine Valley groundwater for the proposed OWEF could also result in drawdown effects at other groundwater wells in the vicinity; as with the potential for overdraft to occur, any drawdown effects associated with the proposed OWEF would be temporary in nature, and would be reversed by ceasing project pumping, per mitigation requirements. In addition, because the private well proposed for use is located within the surface recharge area of the Campo-Cottonwood Sole Source Aquifer, use of groundwater from this source is therefore subject to review by the EPA.

Section 3.20 of this EIS/EIR describes that the water supply for the Proposed Action may also be purchased from the City of Brawley (treated municipal water), from Seeley County Water District (treated municipal water), from Vulcan Materials (Dixieland Mine groundwater supply well), and/or the IID (West-Side Canal water); these water sources, if secured for the proposed OWEF, would not contribute to overdraft or drawdown conditions within either SSA.

BMPs identified by the BLM and mitigation measures developed for the Proposed Action are presented in Section 4.19.10 and would minimize potential impacts associated with groundwater overdraft and drawdown. Mitigation measures which specifically address potential overdraft and drawdown effects are Mitigation Measures Water-2 (*Develop a Water Supply Contingency Plan for Construction*) and Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*). Mitigation Measure Water-2 requires that a groundwater investigation be conducted prior to the use of groundwater resources to meet project requirements, and that a secondary groundwater supply well would be planned for and utilized if necessary to ensure that sufficient production rates are available to meet project needs, thereby avoiding potential drawdown effects that may result from over-pumping a well, and minimizing the potential for project-related overdraft to occur, by ensuring a better understanding of the groundwater resource. Mitigation Measure Water-3 requires that a comprehensive groundwater monitoring plan be implemented during project-related pumping activities to ensure that data is gathered to reflect how groundwater behaves in response to the introduction of project-related pumping, and that appropriate actions are implemented to avoid adverse impacts when the data reflects undesireable effects, such as overdraft or drawdown.

Recharge. Creation of new impervious surfaces associated with the Proposed Action could interfere with groundwater recharge by reducing the amount of surface area through which precipitation and surface water percolates to underlying aquifers. New impervious surfaces would result from the implementation of permanent project components, including the concrete foundations, O&M facility, access roads, and substation. In addition to permanent infrastructure, temporary construction facilities including covered assembly areas, concrete batch plant, staging areas, and temporary parking areas would also introduce new impervious areas that could affect the rate and distribution of surface water percolation/infiltration to underlying groundwater.

- Ocotillo-Coyote Wells SSA. Primary recharge to the Coyote Wells Valley Groundwater Basin, which underlies the proposed OWEF site and is paritially within the surface area of the Ocotillo-Coyote Wells SSA, occurs through percolation of precipitation and ephemeral runoff from the surrounding mountains (see Section 3.20.1.1). All site improvements that would occur during construction of the proposed OWEF, including structures and facilities described in Section 2.1.3.1 of this EIS/EIR, would introduce the potential to alter groundwater recharge rates and patterns. The introduction of permanent impermeable infrastructure would result in site-specific alterations to infiltration rates and patterns; however, as described in Chapter 2 and in Table 2-3, the proposed OWEF would result in permanent disturbance to 155.5 acres of the 12,436-acre site, or roughly 1.4 percent of the overall site. This disturbance area is very small compared to the overall project area, and the subsequent effect on groundwater recharge via infiltration would be negligible. Additionally, ground cover would be designed to maximize infiltration rates and minimize potential impacts to groundwater recharge, per the implementation of BMPs and mitigation measures summarized below and presented in Section 4.19.10.

- Campo-Cottonwood SSA. Primary recharge to groundwater resources in the Pine Valley area, within the surface recharge area of the Campo-Cottonwood SSA, also occurs through ephemeral stream flow and infiltration of surface water runoff (see Section 3.20.1.1). However, construction of the proposed OWEF would not include the installation of any new infrastructure or impermeable surface cover that could affect groundwater recharge rates or patterns in this area, resulting in no impacts to recharge.

BMPs and mitigation measures presented in Section 4.19.10 would minimize potential impacts to groundwater resources that could occur as a result of changes to recharge rates and/or patterns. Mitigation measures which specifically address potential impacts associated with changes to groundwater recharge rates and patterns include Mitigation Measures Water-4 (*Install pervious and/or high-roughness groundcover where applicable*) and Water-5 (*Design onsite drainage improvements to maximize* *groundwater recharge*). Mitigation Measure Water-4 would would minimize the potential for the proposed development to adversely affect groundwater recharge by requiring that alterations to the permeability of surface materials that would occur under the proposed OWEF, such as new surfaces and ground cover, would be as permeable as possible. Mitigation Measure Water-5 would also minimize the potential for the Proposed Action to adversely affect groundwater recharge rates and patterns by requiring that on-site drainage alterations that occur under the project are designed to maximize groundwater recharge, such as by allowing surface water to collect in surface depressions and infiltrate to underlying groundwater resources, and that alterations to on-site drainage patterns are minimized as much as possible, thereby maintaining existing rates and patterns of groundwater recharge.

Construction Site Dewatering. Construction of the proposed OWEF would require excavation activities that may encounter shallow groundwater and require construction site dewatering activities.

- Ocotillo-Coyote Wells SSA. As described in Section 3.20.1.1 of this EIS/EIR, the most productive water-bearing zones in the Coyote Wells Valley Groundwater Basin are located between 100 and 300 feet below ground surface (bgs), but unconfined shallow groundwater is also present in parts of the basin. Perched groundwater may be ephemeral in nature (occurring in direct response to precipitation events), or it may be recharged by percolation from surface water and/or nearby saturated zones. Perched groundwater is essentially a subsurface zone of saturation that is separated from the main groundwater table by a typically impermeable divide. It is not possible to quantify the likelihood of encountering perched groundwater because it is not part of the main groundwater resource and would not be detected in typical groundwater monitoring activities. If project excavation results in the unexpected encountering of perched groundwater, the local groundwater supply could be adversely affected as a result of directly encountering construction vehicles and equipment, and encountering the potentially hazardous materials such as motor oil and lubricating fluids required to operate vehicles and equipment, and/or the local groundwater supply could be adversely affected due to uncontrolled release of groundwater onto the surface. If perched groundwater is unexpectedly encountered during project construction, dewatering activities would occur in compliance with the California Stormwater Quality Association's (CASQA) California Stormwater BMP Handbook for Construction, or other similar guidance document supported by the County of Imperial. Implementation of BMPs and mitigation measures summarized below and presented in Section 4.19.10 would minimize and/or avoid potential impacts resulting from dewatering.
- Campo-Cottonwood SSA. As previously discussed, this analysis of potential water supply impacts focuses on the Pine Valley groundwater source in order to be conservative in characterizing potential impacts, as the other potential sources are managed under existing plans and/or permits to avoid adverse effects. Therefore, for the purposes of this analysis, it is assumed that groundwater from the Pine Valley area would be used to meet construction water requirements and would be obtained from an existing groundwater well, and no excavation activities or permanent infrastructure installation would occur. Use of Pine Valley groundwater is not anticipated to result in encountering shallow groundwater such that dewatering activities would be required, resulting in no impact.

BMPs and Mitigation Measure Water-6 (*Construction site dewatering management*), presented in Section 4.19.10, would be implemented during construction to address potential adverse effects associated with construction site dewatering, if such actions are necessary during construction. Mitigation Measure Water-6 would ensure that any required construction site dewatering activities occur in compliance with all applicable BMPs, and that grading and excavation activities are monitored for soil moisture in order to anticipate the need for dewatering activities, and minimize the potential for any related adverse effects.

Water Supply Reliability. In addition to the BMPs and mitigation measures designed to minimize and/or avoid potential effects to groundwater supply and recharge described above, this water resources analysis also addresses water supply reliability. Section 3.20 of this EIS/EIR provides a discussion of Senate Bill 610 (SB 610), which requires detailed analysis of water supply availability for certain types of large development projects. SB 610 requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA and meets certain requirements. In accordance with SB 610, a WSA should assess water supply availabity to meet the water requirements of the project, with consideration to other reasonably foreseeable water demands that would affect the identified source, over a period of twenty years and under varying climatic conditions. As described in Section 3.20, the proposed OWEF does not meet the intent of the definition of "project" under SB 610 and does not meet the 75 afy threshold specified by SB 267. Therefore, a WSA under SB 610 or SB 267 is not required. Also as noted in Section 3.20, the project Applicant has prepared an assessment of water supplies for the project, which is incorporated by reference throughout the EIS/EIR and included as Appendix P.

The assessment of water supplies prepared for the proposed OWEF indicates that the private groundwater well in Pine Valley identified as a water source for the Proposed Action has sufficient capacity and availability to meet water requirements of the project. As previously discussed, the other potential water sources identified for the proposed OWEF are managed under existing plans and/or permits that would avoid adverse impacts and therefore, in order to be conservative in this analysis of potential OWEF impacts, it is assumed that the Pine Valley water source would be used to meet project reqquirements. Mitigation Measure Water-7 (*Develop master Drought Water Management and Water Conservation Education Programs*), presented in Section 4.19.10, is required to address potential drought conditions that could affect water availability, and ensure water supply reliability during construction of the proposed OWEF. This mitigation measure requires that a master Drought Water Management Program is prepared by the Applicant and submitted to the County for approval. The plan shall provide guidelines on how all future water use will be managed during "severe" drought year(s), thus minimizing and/or avoiding potential impacts.

Surface Water and Drainage Patterns

Existing drainage patterns on the proposed OWEF site are characterized by ephemeral drainages which contain water only after precipitation events sufficient to produce runoff. Alterations to drainage patterns on and surrounding the proposed OWEF site associated with construction activities could result in erosion and/or flooding effects on or off site. The rate and amount of surface runoff which characterizes drainage patterns in the area is determined by multiple factors, including the following: precipitation and evaporation; infiltration of precipitation and imported water to groundwater; and topography. These factors are discussed below with regard to the project's potential to affect drainage patterns of the site in a manner that results in erosion and/or flooding on or off site.

- Precipitation and Evaporation. The Proposed Action would have no effect on the amount or intensity of precipitation that occurs in the proposed OWEF area. Regarding evaporation, the placement of permanent OWEF infrastructure could result in localized decreased rates of evaporation, if the infrastructure results in shading that cools the ground to a degree that less moisture converts from liquid to vapor form. Table 2.2 (Acres of Disturbance for Proposed Action) describes that the Proposed Action would result in permanent disturbance to approximately 155.5 acres of the 12,436-acre project site, approximately 1.4 percent of the overall site. Due to the area of permanent disturbance compared to the overall size of the site, it is reasonably anticipated that the placement of new infrastructure would have no practicable effect on ground temperature across the site, or on associated rates of evaporation.

- *Infiltration of Precipitation and Imported Water.* As described in the analysis of groundwater recharge effects, construction of the proposed OWEF would introduce new impervious surfaces that could affect site-specific infiltration patterns, but such effects would not result in substantial impacts to groundwater supply. The Proposed Action would require minimal water for dust control due to the use of MgCl as a soil binder (see Section 2.1.3.5); although some water would be required for road maintenance, resulting in the application of imported water that would not otherwise be present at the site, such water would be specifically applied where required for road maintenance and is not anticipated to have any practicable effect on infiltration rates or drainage patterns.
- *Topography*. Implementation of the Proposed Action would require grading and excavation activities associated with turbine foundations and crane pads, batching plant and laydown/parking area, rail uploading yard, access roads, collector lines, meteorological towers, substation/utility switchyard, O&M facility, and gravel sources. Per the data presented in Table 2.3 (Acres of Disturbance for Proposed Action), approximately 499.1 acres of the 12,436-acre site would be temporarily disturbed during construction of the proposed OWEF. As described in Section 2.1.3.2.3 (Site Clearing, Grading, and Excavation), soil excavation (cut) and fill will be balanced, with excavated soils also used as fill. The overall topography of the proposed OWEF site would not be substantially altered, although localized changes to drainage patterns would occur.

It is anticipated that any increase in surface water runoff resulting from permanent project features would be location-specific, and that such effects would not influence surface runoff in a manner which would result in erosion or flooding on site or off site. As described in Section 5.1.10.2 (Water Resources / Hydrology) of the Plan of Development for the Proposed Action (OE, 2010), the proposed OWEF includes permanent low-water “Arizona” crossings where access roads would cross drainage features. Arizona crossings allow water to flow over or through access roads, minimizing potential adverse effects associated with drainage pattern alterations from road alignments.

Either one temporary pond or up to ten 12,000-gallon temporary water storage tanks may be installed to support the project’s water supply requirements. If used, the temporary pond would be constructed at the temporary laydown area. The dimensions of the pond would be as follows: 150 feet wide, 150 feet long, and 8 feet deep. It would also include a water-tight synthetic liner. The excavated material from the pond would be used to build up a berm around all four sides. This temporary pond would be fully removed with the restoration of the laydown area. If temporary storage tanks are used in lieu of the pond, the tanks will be positioned throughout the project site inside road or turbine assembly disturbance corridors in order to improve access to water for dust control.

The Imperial County Fire Department will also require that a separate 10,000-gallon water supply at a minimum be provided at the O&M facility for fire suppression. The source of the water for toilets and fire suppression may be the Pine Valley location or one of the alternate locations discussed above; it is anticipated that the same water source(s) would be used for construction, operation and maintenance, and decommissioning of the project.

The Proposed Action's potential to alter the existing drainage pattern(s) of the site would be minimized through compliance with design specifications and BMPs identified by the BLM, listed in Section 4.19.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential impacts to surface waters and drainage patterns: Water-1 (*Demonstrate compliance with water quality permits*), Water-4 (*Install pervious and/or high-roughness groundcover where applicable*), Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*).

Mitigation Measure Water-1 requires the Applicant to demonstrate compliance with all applicable permitting requirements prior commencing construction, which will ensure that the proposed OWEF is in compliance with all applicable water quality permits and waste discharge requirements. Mitigation Measure Water-4 would would minimize the potential for the proposed development to accelerate stormwater runoff rates by requiring that alterations to the permeability of surface materials that would occur under the proposed OWEF, such as new surfaces and ground cover, be done so that they are as permeable as possible. Mitigation Measure Water-8 would ensure that project structures are designed, engineered, constructed, and maintained to avoid potential damage associated with flooding and/or erosion, and also would ensure that the SWPPP that would be developed and implemented for the Proposed Action would include specific BMPs to maintain existing surface drainage patterns, thus minimizing potential adverse impacts associated with flooding. Mitigation Measure Water-9 would ensure that the SWPPP to be developed and implement for the Proposed Action includes specific BMPs to protect water quality and avoid adverse effects of project construction on surface water quality, including jurisdictional waters. Please see Section 4.19.10 for the full text of mitigation measures.

Jurisdictional Drainages. Surface water and drainage patterns could be adversely affected if jurisdictional drainages are disturbed or altered as a result of project construction, operation, or decommissioning. As described in Section 3.20.1.1, designated jurisdictional drainages are located throughout the proposed OWEF site. The proposed OWEF would not place permanent infrastructure within designated jurisdictional drainages. Section 1.3.10 (Erosion Control and Stormwater Drainage) of the Plan of Development (OE, 2010) describes that all drainages within the proposed OWEF site are considered waters of the U.S., subject to the jurisdiction of the ACOE. Also as described, access roads would cross all drainages via at-grade crossings, and no culverts would be installed. This type of crossing would minimize potential effects to drainage patterns and jurisdictional drainages on the project site. Drainages disturbed by temporary construction activities would be restored to as near existing conditions as possible. Other potential impacts of the proposed OWEF on jurisdictional drainages are addressed Sections 4.17 (Vegetation Resources) and 4.21 (Wildlife Resources) of this EIS/EIR.

Implementation of the following mitigation measures, in addition to any mitigation measures identified in Sections 4.17 and 4.21 for biological resources, would minimize and/or avoid potential water resources impacts to jurisdictional drainages: Water-1 (*Demonstrate compliance with water quality permits*), Water-9 (*Construction SWPPP specifications*), and Water-10 (*Accidental spill control and environmental training*). Mitigation Measure Water-1 would ensure that the Proposed Action occurs in compliance with all applicable laws and regulations, including those addressing the protection of jurisdictional waters, such as the Clean Water Act. Mitigation Measure Water-9 ensures that the SWPPP to be developed and implement for the Proposed Action includes specific BMPs to protect water quality and avoid adverse effects of project construction on surface water quality, including jurisdictional waters. Mitigation Measure Water-10 ensures that the location(s) and methods of hazardous materials handling and storage are specified prior to the onset of construction to minimize or avoid the potential for water quality degradation associated with an accidental spill or release of hazardous materials to occur.

Stormwater Drainage Systems

No stormwater drainage system exists at the proposed OWEF site. Construction of the proposed OWEF would include implementation of a SWPPP, in compliance with Section 402 of the CWA (see Section 3.20.2.1 of this EIS/EIR), which specifies BMPs to minimize and/or avoid potential impacts associated with stormwater runoff. Other stormwater diversion and/or other run-off control channels are not planned for the proposed OWEF because overall disturbance to the site is not anticipated to substantially change the hydrologic patterns of the area or alter the amount of stormwater runoff from the site. The proposed OWEF would not have the potential to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems and, therefore, no mitigation measures are required to address potential effects to existing or planned stormwater drainage systems.

There is potential for construction of the proposed OWEF to contribute sources of polluted runoff if an accidental leak or release of harmful materials were to occur during construction activities. Potential water quality impacts are discussed in detail below. With implementation of Mitigation Measures Water-9 (*Construction SWPPP Specifications*) and Water-10 (*Accidental spill control and environmental training*), potential impacts associated with the creation of polluted runoff would be minimized and/or avoided. As described above, Mitigation Measure Water-9 ensures that the SWPPP to be developed and implemented for the Proposed Action includes specific BMPs to protect water quality and avoid adverse effects of project construction on surface water quality, including BMPs to prevent drainage pattern alterations to result in adverse effects to surface waters. Mitigation Measure Water-10 ensures that the location(s) and methods of hazardous materials handling and storage are specified prior to the onset of construction to minimize or avoid the potential for water quality degradation associated with an accidental spill or release of hazardous materials to occur.

Flood Hazard Areas

As described in Section 3.20.1.1 of this EIS/EIR, several Flood Hazard Areas designated by the Federal Emergency Management Agency (FEMA) run in an east-west direction through the proposed Site 1, and a small portion of Flood Hazard Area runs in a north-south direction through part of the proposed Site 2. According to FEMA, development is permitted in Flood Hazard Areas provided that the development complies with local floodplain management ordinances. All applicable floodplain management ordinances would be fully complied with in accordance with FEMA's regulations on development in Flood Hazard Areas. The permanent aboveground features associated with the proposed OWEF would be designed and engineered to withstand potential flooding and erosion hazards. Impacts associated with Flood Hazard Areas would be most likely to occur where permanent infrastructure and facilities are constructed in or closely adjacent to a watercourse and/or designated Flood Hazard Area. None of the infrastructure associated with the Proposed Action would be situated within an existing watercourse. However, some wind towers would be placed within or adjacent to areas subject to periodic overland flow and flooding. Routine operations and maintenance procedures would include the inspection and repair of any project infrastructure that may be damaged as a result of heavy flood events. Construction and operation of the proposed OWEF would have no effect on the potential or frequency of flood events.

The Proposed Action's potential to result in impacts associated with Flood Hazard Areas would be minimized through compliance with BMPs identified by the BLM, listed in Section 4.19.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential impacts associated with Flood Hazard Areas: Water-1 (*Demonstrate compliance with water quality permits*), Water-4 (*Install pervious and/or high-roughness groundcover where applicable*), Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*). Mitigation Measure Water-1 would ensure that the Proposed Action occurs in compliance with all applicable laws and regulations, including those addressing the protection of jurisdictional waters, such as the Clean Water Act. Mitigation Measure Water-4 would ensure that the permeability of the ground surface and surface materials are as similar to existing conditions as possible, thus minimizing the potential for sheetflow that could result in flood-related damage. Mitigation Measure Water-8 would ensure that project structures are designed, engineered, constructed, and maintained to avoid potential damage associated with flooding and/or erosion. Mitigation Measure Water-9 ensures that the SWPPP to be developed and implement for the Proposed Action includes specific BMPs to maintain existing surface drainage patterns, thus minimizing potential adverse impacts associated with flooding.

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of sedimentation, and/or through the accidental release of hazardous materials. Soil-disturbing activities that would occur during construction of the proposed OWEF, including excavation and grading, would have the potential to result in erosion (transport) and sedimentation (delivery) that could degrade water quality. This impact would be most likely to occur if a storm event occurs during construction activities, while disturbed soils are exposed and/or have not yet been re-vegetated. In addition, particularly within and adjacent to designated Flood Hazard Areas, surface water runoff could occur as sheet flow, which could increase the potential for erosion of unmanaged disturbed and/or stockpiled soil.

In addition to the potential effects of erosion and sedimentation, the accidental release of hazardous materials during construction of the proposed OWEF could result in water quality degradation within and downstream of the proposed OWEF site. Potentially hazardous materials that may be used and/or produced during construction include but are not limited to the following: diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids required for construction or the operation of construction vehicles and equipment. Motorized equipment used at the project site during construction could leak hazardous materials, such as motor oil, transmission fluid, or antifreeze, due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error.

Direct contact with potentially hazardous materials would result from a spill or leak that occurs directly above or within the bed and banks of a flowing stream or waterbody. Because surface water on the project site is ephemeral in nature, direct contamination as a result of accidental release is considered unlikely, unless a precipitation event occurs during active construction activities. Indirect contamination of surface water could occur if a potentially harmful or hazardous material is released into a dry stream bed or wash and is subsequently transported through runoff during a storm event, eventually making contact with perennial flowing water. Groundwater resources could also be contaminated through indirect contact with potentially harmful or hazardous materials. This could occur if an accidental spill of harmful materials is allowed to leach through the ground surface to underlying groundwater resources, or if construction-related excavation activities encounter perched groundwater and direct contact with hazardous materials occurs.

The Spill Response Plan included as Appendix D to the Hydrological and Environmental Hazard Assessment report was prepared for the proposed OWEF (NAA, 2011a) in compliance with the Federal Spill Prevention, Control, and Countermeasure (SPCC) Plan Regulation (40 CFR 112), and includes instructions for pre-release planning and spill leak prevention, discharge and spill response, and emergency response contracts. This Spill Response Plan would be implemented as part of the proposed OWEF.

In addition, BMPs identified by the BLM and mitigation measures developed for the Proposed Action presented in Section 4.19.10 would minimize potential impacts associated with water quality degradation. Specifically, Mitigation Measure Water-1 (*Demonstrate Compliance with Water Quality Permits*) would ensure that the proposed OWEF is in compliance with all applicable water quality permits and waste discharge requirements prior to the issuance of construction permits. Mitigation Measure Water-6 (*Construction site dewatering management*) would ensure that any required dewatering activities occur in compliance with applicable BMPs, and that potential water quality impacts associated with dewatering would be minimized. Erosion control features and BMPs included in the proposed OWEF's federally-required SWPPP would minimize or prevent disturbed and/or exposed materials from mobilizing in such a way that water quality degradation could occur. Some of the typical BMPs to be required by the SWPPP include but are not limited to straw wattles, check dams, fabric blankets, and silt fencing. Mitigation Measure Water-9 (*Construction SWPPP Specifications*) ensures that location-specific BMPs are employed during construction of the Proposed Action in order to avoid or minimize potential water quality impacts. In addition, Mitigation Measure Water-10 (*Accidental spill control and environmental training*) would minimize the potential for accidental spills of hazardous or potentially hazardous materials to occur, avoiding associated water quality impacts.

Mudflow Hazards

Mudflows are a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity. Mudflow events are caused by a combination of factors, including soil type, precipitation, and slope. Mudflow may be triggered by heavy rainfall that the soil is not able to sufficiently drain or absorb. As a result of this super-saturation, soil and rock materials become unstable and eventually slide away from their existing location. As described in Section 5.1.10.1 (Geologic Resources) of the Plan of Development for the proposed OWEF (OE, 2010), the project would be located on hills, mesas, and valleys of the Jacumba Mountains which are underlain primarily by granitic and volcanic units which are not typically prone to landslides. However, excavation and grading activities associated with construction of the Proposed Action could trigger rock-falls or shallow soil slides. As described in Section 2.1.3.1 (Structure and Facilities), geotechnical studies would be completed prior to construction of the proposed OWEF. The results of these studies would be used to appropriately design and site project infrastructure.

In addition, BMPs identified by the BLM and mitigation measures developed for the Proposed Action are presented in Section 4.19.10, and would minimize potential impacts associated with mudflow hazards. Specifically, Mitigation Measure Water-8 (*Flood and Erosion Structure Damage Protection*) would ensure that project infrastructure is sufficiently protected against the stressors of potential mudflow, thus minimizing the potential for project features to be damaged by or result in damage from mudflow.

Operation and Maintenance

As described in Section 1.3.9 (Water Usage, Amounts, Sources) of the Plan of Development for the proposed OWEF (OE, 2010), water requirements associated with the Operations and Maintenance (O&M) building during project operation would be approximately 0.19 afy. The operational water requirement is associated with the O&M building and sanitary purposes. It is not anticipated that a water source would be necessary to clean WTG blades. As described in Section 2.1.3.5, a Dust Abatement Plan will be implemented and would include the use of MgCl for dust control (during construction and operation). The operational water supply of 0.19 afy would either be purchased from a local vendor (commercial water supplier) and trucked to the project site, or it would be obtained from the same groundwater well(s) in Pine Valley that would be used to obtain construction water, and also trucked to the project site.

It is anticipated that the operational water source(s) would be the same as the construction water source(s) described in Section 3.22 and assessed above.

Drinking water for O&M staff would be supplied from a regional commercial drinking water bottling company. In addition, the Imperial County Fire Department would require an overhead sprinkler system at the O&M building and a water storage tank for fire suppression. As described in Section 2.1.3.1 (Structure and Facilities) of this EIS/EIR, the Imperial County Fire Department will require that a single use 10,000-gallon reserve water tank be maintained on the site of the O&M building.

Water requirements for operation and maintenance of the proposed OWEF would not require use of local groundwater resources from the Ocotillo-Coyote Wells SSA.

Groundwater Supply and Recharge

The discussion of potential construction impacts provided above under "Construction" describes specific scenarios that could result in impacts to groundwater supply and recharge. Each of these potential conditions is discussed below.

Overdraft and Drawdown. The Coyote Wells Valley Groundwater Basin, which underlies the proposed OWEF site, is currently in a state of long-term groundwater overdraft, or the condition where the quantity of water removed from a groundwater basin exceeds the rate of recharge to the basin over an extended duration. The introduction of any new groundwater pumping activities in this basin would exacerbate existing overdraft conditions. The Vulan Materials Dixieland Mine groundwater supply well, which has been identified as a potential water source for the project, is located on the eastern edge of the Coyote Wells Valley Groundwater Basin, outside of the Ocotillo-Coyote Wells SSA; as previously mentioned with regards to this potential water source, if it is used to meet project water requirements, such used would occur in compliance with an existing CUP which restricts total use from the well at 200 afy. Use of this well for the project's water supply would not alter existing conditions relevant to groundwater use at the site and therefore, if this well is used for the project, such use would not result in an adverse impact to overdraft and drawdown. Operation and maintenance of the proposed OWEF would not utilize groundwater resources from within the Ocotillo-Coyote Wells SSA, and would not introduce new uses of Coyote Wells Valley Groundwater Basin water. In order to be conservative for the purposes of this analysis, it is assumed that operational water for the project would be obtained from the Pine Valley groundwtaer well source.

As described in Section 3.20.1.2 (see "Campo-Cottonwood Sole Source Aquifer"), the private well identified for use under the Proposed Action is located within the surface recharge area of the Campo-Cottonwood SSA, but is not located within a defined groundwater basin, and groundwater resources pumped at this well are drawn from fractured rock formations which recharge in direct response to precipitation and surface water infiltration. This area does not appear to be affected by long-term overdraft conditions. As described above in the discussion of construction impacts, mitigation measures recommended during construction would include groundwater monitoring to assess the response of local groundwater levels to project-related pumping activities, in order to avoid or minimize potential overdraft and/or drawdown effects. The operational water requirement of 0.19 afy is minimal compared to construction water requirements of 50 afy, with operational water representing approximately 0.38 percent of the annual construction water requirement. Operation and maintenance of the proposed OWEF would have the potential for minimal effect on groundwater supplies associated with overdraft and drawdown.

Recharge. As addressed in the discussion of construction impacts provided above, groundwater recharge rates and patterns would be affected by the introduction of permanent aboveground infrastructure such as would occur under the proposed OWEF. During operation and maintenance of the proposed OWEF, permanent project components including concrete foundations, the O&M facility, substation facility, and access roads would result in site-specific alterations to local drainage patterns, and associated site-specific alterations to local groundwater recharge patterns. Operation and maintenance activities would include the regular inspections and repair (if necessary) of infrastructure introduced during the construction period. Internal access roads improved during construction of the proposed OWEF would be maintained during operation and maintenance activities, with occasional grading and application of new gravel conducted as necessary to maintain the road surfaces. As described under the discussion of construction impacts, the proposed OWEF site would be designed with implementation of BMPs and mitigation measures to maximize groundwater recharge and minimize disturbance to existing drainage patterns. These BMPs and mitigation measures, provided in Section 4.19.10 of this EIS/EIR, would minimize and/or avoid potential impacts to groundwater recharge. No additional mitigation measures related to groundwater recharge would be required during operation and maintenance.

Construction Site Dewatering. Operation and maintenance of the proposed OWEF would not include excavation activities that could require dewatering activities. No impact to groundwater supply and recharge would occur.

Water Supply Reliability. Operation of the proposed OWEF would require a water supply for sanitary and fire suppression purposes. As described above, in order to be conservative in characterizing potential impacts of the project, it is assumed that operational water would be obtained from the Pine Valley groundwater source. This water would be trucked to the proposed OWEF site and stored in a tank near the O&M building; bottled water from a commercial provider would be utilized for drinking water, and would be delivered to the site via truck. Local groundwater resources from the Ocotillo-Coyote Wells

SSA would not be used to meet operational water requirements. As mentioned above, the operational water requirement of 0.19 afy is minimal compared to construction water requirements of 50 afy, with operational water representing approximately 0.38 percent of the annual construction water requirement. Also as described above in the discussion of construction impacts, a WSA under SB 610 is not required for the Proposed Action, as related to water supply reliability.

Surface Water and Drainage Patterns

Operation and maintenance of the proposed OWEF would include the routine maintenance and occasional repair (as needed) of infrastructure installed during the construction period, including occasional re-grading and/or re-graveling of access roads; operation and maintenance would not introduce new infrastructure or alter existing surface water and drainage patterns beyond what is completed during the construction period. Operation and maintenance would not substantially alter existing drainage patterns or result in substantial erosion, siltation, or flooding on or off site. No additional mitigation measures are necessary.

Stormwater Drainage Systems

Operation and maintenance of the proposed OWEF would not introduce any new stormwater drainage system(s). As with the potential construction impacts described above, operation and maintenance activities would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.

Operational activities would include regular inspection and maintenance of project infrastructure to ensure that leaks of potentially harmful fluids such as oil do not occur, or are contained and remediated immediately. As described in Section 1.3.12 (Waste and hazardous materials management) of the Plan of Development (OE, 2010), there would be an approximately 10-foot by 14-foot oil containment building within the boundary of the O&M yard to ensure the safe and secure storage of oil and other lubricants and volatile liquids. In addition, the O&M building would include a septic system and leach field, which would be permitted through Imperial County, and would be pumped regularly, with waste transported off site for disposal by a licensed waste treatment contractor. Operation and maintenance of the proposed OWEF would not provide substantial additional sources of polluted runoff.

Flood Hazard Areas

As described in Section 3.20.1.1 and above in the discussion of construction impacts, several FEMA-designated Flood Hazard Areas are located within the proposed OWEF site, and all permanent infrastructure installed under the proposed OWEF would be designed to withstand potential flooding and erosion hazards. Operation and maintenance activities would not introduce new infrastructure or activities with the potential to impede or redirect flood flows such that new impacts would occur.

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of sedimentation, and/or through the accidental release of hazardous materials. Soil-disturbing activities that would occur during operation and maintenance of the proposed OWEF would be minimal, characterized by road improvements or repairs as necessary to maintain access throughout the site, and the transport of vehicles and equipment throughout the site as necessary to regularly inspect project infrastructure. These activities would not introduce substantial new potential for soil erosion (transport) and sedimentation (delivery) that could degrade water quality. Regarding the potential for operational and maintenance activities to result in the accidental release of potentially hazardous materials, as described above, project infrastructure would be regularly inspected to minimize and/or avoid the potential for such leaks to occur. In addition, as described in Section 1.3.17 (Spill prevention and containment for construction and operation of facility) of the Plan of Development (OE, 2010), a Hazardous Materials Business Plan / Spill Prevention Control and Countermeasures Plan would be implemented to ensure that adequate containment would be provided to control accidental spills, that adequate spill response equipment and absorbents would be readily available, and that personnel would be properly trained in how to control and clean up any potential spills (OE, 2010). Operation and maintenance of the proposed OWEF would not introduce substantial new potential for water quality impacts to occur, and no new mitigation measures are required.

Mudflow Hazards

Operations and maintenance of the proposed OWEF would not introduce any infrastructure or activities that would result in new mudflow hazards. No additional mitigation measures are required.

Decommissioning

Decommissioning of the proposed OWEF would include the removal and disposal of turbine towers, above-ground electrical tower components, and substation components, as well as the removal of all below-ground infrastructure to three feet below the ground surface. The decommissioning activities that are anticipated to require water include dust control for road usage, soil conditioning and dust control during foundation removal and backfill, road restoration, ground re-contouring, and reseeding/ revegetation. Decommissioning details such as schedule, total length of road restoration, and extent of re-contouring are unknown at this time; therefore, water demand associated with decommissioning is reasonably estimated as a percentage of construction water requirements. Decommissioning activities would be substantially less water-intensive that construction activities, largely because decommissioning would require no water for concrete mixing. A reasonable and conservative estimate of decommissioning water requirements is considered to be approximately 50 percent of construction water requirements, or not more than 25 acre-feet. It is also reasonably assumed that the same water source used during construction would be used to meet decommissioning requirements.

A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS and Record of Decision (ROD), and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of hydrology and water resources from potentially adverse impacts.

Groundwater Supply and Recharge

The discussion of potential impacts provided above under "Construction" describes specific scenarios that could result in impacts to groundwater supply and recharge. Each of these potential conditions is discussed below.

Overdraft and Drawdown. As previously described, the Coyote Wells Valley Groundwater Basin underlies the proposed OWEF site and is currently in a long-term state of overdraft, which occurs when the quantity of water removed from a groundwater basin exceeds the rate of recharge to the basin over an extended duration; the introduction of any new groundwater pumping activities in this basin would exacerbate existing overdraft conditions. No new uses of the Coyote Wells Valley Groundwater Basin would be introduced for the purposes of decommissioning the proposed OWEF; therefore, decommissioning of the proposed OWEF would not contribute to overdraft and/or drawdown in the Coyote Wells Valley Groundwater Basin. As described above, it is anticipated that the same water source used during construction of the proposed OWEF would be used to meet decommissioning water requirements of not more than 25 acre-feet and therefore, in order to be conservative in characterizing impacts of the project it is assumed that the Pine Valley groundwater source would be used for project decommissioning. Depending on other uses of Pine Valley groundwater resources at the time of decommissioning the proposed OWEF, temporary drawdown conditions could result from using this source of water for decommissioning, and such effects would recover following the completion of decommissioning activities.

BMPs identified by the BLM and mitigation measures developed for the Proposed Action are presented in Section 4.19.10 and would minimize potential impacts associated with groundwater overdraft and drawdown. Mitigation measures which specifically address potential overdraft and drawdown effects are Mitigation Measures Water-2 (*Develop a Water Supply Contingency Plan for Construction*) and Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*). Mitigation Measure Water-2 requires that a groundwater investigation be conducted prior to the use of groundwater resources to meet project requirements, and that a secondary groundwater supply well would be planned for and utilized if necessary to ensure that sufficient production rates are available to meet project needs, thereby avoiding potential drawdown effects that may result from over-pumping a well, and minimizing the potential for project-related overdraft to occur, by ensuring a better understanding of the groundwater resource. Mitigation Measure Water-3 requires that a comprehensive groundwater monitoring plan be implemented during project-related pumping activities to ensure that data is gathered to reflect how groundwater behaves in response to the introduction of project-related pumping, and that appropriate actions are implemented to avoid adverse impacts when the data reflects undesireable effects, such as overdraft or drawdown.

Recharge. As described in the discussion of construction impacts, new impervious surfaces resulting from new infrastructure could affect the rate and distribution of surface water percolation/infiltration to underlying groundwater; removal of this infrastructure during decommissioning activities would facilitate restoration of pre-construction recharge rates and patterns. However, as described in Section 2.1.3.4 of this EIS/EIR, decommissioning of the proposed OWEF would remove underground infrastructure to three feet below the ground surface; in comparison, as described in Section 2.1 of the Plan of Development (OE, 2010), concrete turbine foundations would be approximately eight feet deep. Therefore, decommissioning activities would not remove the entire turbine foundations, and would leave an approximately five-foot-thick portion of each concrete foundation below the ground surface. This impermeable area would maintain site-specific alterations to local recharge patterns introduced during construction of the proposed OWEF. Restoration of the site would include returning the proposed OWEF site as close as reasonably possible to pre-construction conditions suitable for current adjacent land. Therefore, potential effects of decommissioning activities to groundwater recharge are anticipated to be beneficial.

Construction Site Dewatering. Decommissioning of the proposed OWEF would include excavation activities to remove infrastructure to a depth of three feet below the ground surface, and to restore the proposed OWEF site to as close to pre-construction conditions as possible. These excavation activities would include the potential to encounter perched groundwater, or unconfined shallow groundwater, which would require dewatering activities to avoid potentially adverse effects to local groundwater resources. As mentioned above, a decommissioning plan would be implemented prior to decommissioning activities, and would include BMPs consistent with the BLM Wind Energy Program Programmatic EIS/ROD and similar to the BMPs implemented with construction of the proposed OWEF (presented below in Section 4.19.10). As such, dewatering BMPs would be implemented during decommissioning activities, as necessary.

Water Supply Reliability. As described above, decommissioning of the proposed OWEF would require no more than 25 acre-feet, and it is reasonably assumed that the same water source used during construction would be used during decommissioning. As described in Section 3.20, the proposed OWEF does not meet the definition of "Project" under Senate Bill 610 (SB 610) because the Proposed Action would not be an "industrial plant" with more than 1,000 persons or an "industrial park" planned to house more than 1,000 persons, and the passing of Senate Bill 267 (SB 267) clarified that wind energy projects which require less than 75 afy, such as the proposed OWEF, are not subject to SB 610. Therefore, a WSA under SB 610 is not required for the proposed OWEF. However, the project Applicant has prepared an assessment of water supplies for the project, which is incorporated by reference throughout the EIS/EIR and included as Appendix P. In addition, since publication of the Draft EIS/EIR, additional potential water supplies have been identified, as described in Section 3.20.1. Sufficient water supply is available to meet the requirements of the proposed OWEF.

Mitigation Measure Water-7 (*Develop master Drought Water Management and Water Conservation Education Programs*), presented in Section 4.19.10, is required to address potential drought conditions that could affect water availability, and ensure water supply reliability during construction, operation, and decommissioning of the proposed OWEF. This mitigation measure requires that a master Drought Water Management Program and Water Conservation Education Program be implemented in coordination with the BLM and the County, as applicable. These programs shall provide guidelines on how all future water use will be managed during "severe" drought year(s), thus minimizing and/or avoiding potential impacts.

Surface Water and Drainage Patterns. As described in Section 2.1.3.4 of this EIS/EIR and summarized above, decommissioning activities would include removal of all infrastructure introduced during the construction phase, including below-grade infrastructure to three feet below the ground surface. The discussion of potential impacts that would occur during construction of the proposed OWEF describes that alterations to drainage patterns would occur as a result of new infrastructure, and that such alterations would be location-specific and would not influence surface runoff in a manner which would result in erosion or flooding on or off site. Similarly, the removal of infrastructure from the proposed OWEF site would facilitate restoration of the existing, pre-construction drainage patterns, characterized by ephemeral drainages which contain water only after precipitation events sufficient to produce runoff. The decommissioning plan that would be implemented prior to the termination of the ROW authorization (see Section 2.1.3.4) would include BMPs consistent with the BLM Wind Energy Program EIS/ROD, similar to the BMPs implemented with construction of the proposed OWEF (presented below in Section 4.19.10). As such, erosion control measures would be implemented to avoid and/or minimize potential adverse effects associated with alterations to surface water drainage patterns that could result in erosion or siltation on or off site. All roads and tower pads would be restored in accordance with the BLM-approved decommissioning plan. Decommissioning of the proposed OWEF would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff such that erosion, siltation, or flooding on or off site would occur, and no additional mitigation measures are required.

Jurisdictional Drainages. As described in Section 3.20.1.1, designated jurisdictional drainages are located throughout the proposed OWEF site; per the Plan of Development, all drainages on the proposed OWEF site are considered Waters of the U.S., subject to jurisdiction of the ACOE. Access roads required to cross jurisdictional drainages on the site would be designed with at-grade crossings, with no culverts installed. This design would minimize potential effects with altering drainage alignments. Decommissioning activities would include the removal and restoration of all access roads on the site, except those roads that landowners wish to retain. Road restoration would include re-grading as close as reasonably possible to the original ground contours. These activities would ultimately benefit jurisdictional drainages by restoring original contours and removing potential flow diversions associated with access roads, although earth disturbing activities could result in potential erosion and sedimentation impacts to water quality until restoration is complete. Implementation of the decommissioning plan would include BMPs consistent with the BLM Wind Energy Program Programmatic EIS/ROD and similar to the BMPs implemented with construction of the proposed OWEF (presented below in Section 4.19.10), including as relevant to potential water quality impacts. Other potential impacts of the proposed OWEF on jurisdictional drainages are addressed Sections 4.17 (Vegetation Resources) and 4.21 (Wildlife Resources) of this EIS/EIR.

Flood Hazard Areas

Decommissioning of the proposed OWEF would remove infrastructure from the project site, and would remove potential impacts introduced during construction of the proposed OWEF associated with placing structures within a Flood Hazard Area such that flood flows could be impeded or redirected.

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of sedimentation, and/or through the accidental release of hazardous materials. Soil-disturbing activities that would occur during decommissioning of the proposed OWEF, including excavation and grading, would have the potential to result in erosion (transport) and sedimentation (delivery) that could degrade water quality. This impact would be most likely to occur if a storm event occurs during decommissioning activities, while disturbed soils are exposed and/or have not yet been re-vegetated. In addition, particularly within and adjacent to designated Flood Hazard Areas, surface water runoff could occur as sheet flow, which could increase the potential for erosion of unmanaged disturbed and/or stockpiled soil. In addition, as described in Section 5.10.1.7 (Hazardous Materials and Waste Management Impacts) of the Plan of Development for the proposed OWEF, decommissioning activities would involve the handling and disposal of substantial quantities of solid wastes and industrial wastes, including fluids such as lubricating oils, hydraulic fluids, and coolants drained from the turbine components (OE, 2010). These materials are anticipated to be similar in chemical composition to spent fluids removed during routine maintenance and would be managed in the same manner as analogous maintenance-related wastes (OE, 2010). The handling and disposal of these and other potentially hazardous materials during decommissioning of the proposed OWEF would introduce a greater potential for an accidental release and associated water quality degradation to occur; however, as described above, a decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS/ROD, and would require BMPs and stipulations similar to those applied during construction activities, including as related to the proper handling and storage of potentially hazardous materials.

Stormwater Drainage Systems

Decommissioning of the proposed OWEF would not introduce a new stormwater drainage system and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As described above, hazardous materials would be handled and disposed of during decommissioning activities, and would introduce the potential for adverse water quality impacts to occur. However, all hazardous and potentially hazardous materials would be handled, stored, and disposed of in compliance with a decommissioning plan to avoid and/or minimize adverse effects, and decommissioning activities would therefore not provide substantial additional sources of polluted runoff.

Mudflow Hazards

Decommissioning activities would remove project infrastructure from the site, and would restore the site to conditions comparable to pre-construction. As such, infrastructure introduced during construction of the proposed OWEF would be removed and would no longer be subject to inundation by mudflow, and potential adverse effects associated with mudflow hazards would be decreased.

4.19.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.19.2. Only those significance criteria which were determined in Section 4.19.2 to be relevant to the project are addressed below.

Construction

- **WR-1.** Construction of the proposed OWEF would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Impacts associated with the depletion of groundwater resources and interference with groundwater recharge would be potentially significant due to overdraft conditions, drawdown at wells in the vicinity, alteration of groundwater recharge rates and patterns due to the introduction of impermeable surfaces, and/or unexpectedly encountering perched groundwater during construction activities. However, all potential impacts associated with groundwater supply and recharge would be reduced to a less-than-significant level with implementation of BMPs and mitigation measures listed in Section 4.19.10. Potential impacts of construction to groundwater resources would be less than significant, such that a net deficit in aquifer volume or lowering of the local groundwater table would not occur.
- **WR-3** and **WR-4.** Construction of the proposed OWEF would include earth-disturbing activities and the installation of new infrastructure that would introduce the potential to substantially alter existing drainage patterns of the site, such that erosion, siltation, and/or flooding on or off site could occur.

However, with implementation of BMPs and mitigation measures listed in Section 4.19.10, potential impacts would be reduced to a less-than-significant level.

- **WR-5.** The proposed OWEF does not include installation of new stormwater drainage systems, and would not affect existing stormwater drainage systems. However, due to earth-disturbing activities that would occur during construction, and the use of potentially hazardous materials required to operate construction equipment and machinery, construction of the proposed OWEF would introduce the potential to create additional sources of polluted runoff. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with construction of the proposed OWEF are characterized in the impact discussions summarized above; construction of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** During construction of the proposed OWEF, new infrastructure would be installed within and adjacent to designated Flood Hazard Areas, and in the vicinity of areas subject to mudflow hazards; construction of the proposed OWEF would therefore introduce the potential to result in significant impacts associated with impeding or redirecting flood flows, and/or inundation by mudflow. With implementation of BMPs and mitigation measures listed in Section 4.19.10, these potential impacts would be less than significant.

Operation and Maintenance

- **WR-1.** Operation and maintenance of the proposed OWEF would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Potential impacts of operation and maintenance associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant, as no new infrastructure or activities with the potential to affect groundwater resources would be introduced.
- **WR-3** and **WR-4.** Operation and maintenance of the proposed OWEF would not substantially alter existing drainage patterns of the site, and potential impacts associated with erosion, siltation, and/or flooding occurring on or off site would be less than significant.
- **WR-5.** Operation and maintenance of the proposed OWEF would include the handling, storage, and disposal of substantial amounts of harmful and potentially hazardous materials, and would therefore introduce the potential to result in significant impacts associated with the creation of additional sources of polluted runoff, if such materials were accidentally released and/or spilled. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that hazardous materials would be properly handled, stored, and disposed of, and that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with operation and maintenance of the proposed OWEF are characterized in the impact discussions summarized above; operation and maintenance of the project would not otherwise substantially degrade water quality.

- **WR-8** and **WR-10.** After the completion of construction activities, no new infrastructure or activities that could introduce significant impacts associated with impeding or redirecting flood flows and/or inundation by mudflow would occur; during operation and maintenance of the proposed OWEF, such impacts would be less than significant.

Decommissioning

- **WR-1.** Decommissioning of the proposed OWEF would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Potential impacts of decommissioning associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant, as no new infrastructure or activities with the potential to affect groundwater resources would be introduced.
- **WR-3** and **WR-4.** Decommissioning of the proposed OWEF would include earth-disturbing activities including excavation and grading to restore original, pre-construction land contours as much as possible, and these alterations would introduce the potential to cause erosion, siltation, and/or flooding on or off site, similar to such impacts during construction of the proposed OWEF. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would reduce potential impacts to a less-than-significant level.
- **WR-5.** Decommissioning of the proposed OWEF would include the handling, storage, and disposal of substantial amounts of harmful and potentially hazardous materials, and would therefore introduce the potential to result in significant impacts associated with the creation of additional sources of polluted runoff, if such materials were accidentally released and/or spilled. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that hazardous materials would be properly handled, stored, and disposed of, and that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with decommissioning of the proposed OWEF are characterized in the impact discussions summarized above; decommissioning of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** The removal of infrastructure from areas within and adjacent to flood hazard areas and areas subject to inundation by mudflow that would occur during decommissioning of the proposed OWEF would decrease adverse effects associated with the construction of such infrastructure, and potentially result in beneficial effects associated with the removal of infrastructure from areas prone to flooding and mudflow hazards.

4.19.4 Alternative 2: 137 Wind Turbine Generators

Alternative 2 would include 21 fewer WTGs than the Proposed Action, as described in Section 2.3.2 of this EIS/EIR. Compared to the Proposed Action, the turbines eliminated under this alternative include four in the southern portion of Site 2, five in the northeast portion of Site 1, and twelve along the perimeter of the project in the northwest portion of Site 1.

4.19.4.1 Direct and Indirect Impacts

Alternative 2 would be subject to the same water quality standards and waste discharge requirements described for Alternative 1. Mitigation Measure Water-1 (*Demonstrate Compliance with Water Quality Permits*) would ensure compliance with all water quality standards and waste discharge requirements during construction, operation and maintenance, and decommissioning of Alternative 2. Therefore, potential impacts associated with permit compliance are the same for all three project phases, and are not addressed further in this discussion for Alternative 2.

Construction

Construction of Alternative 2 would require a water supply for concrete batching and turbine and building foundations. Due to the construction of 21 fewer WTGs than the Proposed Action, a proportionately lower quantity of water would be required for these activites. The Proposed Action would construct 158 WTGs and Alternative 2 would construct 137 WTGs, a difference of approximately 13 percent. During construction, water would be required for manufacturing of concrete foundations for common facilities such as the O&M building and the substation, in addition to the WTG foundations; water would also be required for common facilities such as maintenance and dust suppression along roads. Therefore, an exact extrapolation cannot be made between the number of WTGs constructed and the volume of water required during construction. However, for the purposes of quantifying potential impacts of Alternative 2 to water resources and providing a basis of comparison between the alternatives, it is assumed that roughly 13 percent less water would be required for construction of Alternative 2, in comparison to Alternative 1. As such, Alternative 2 would require a construction water supply of roughly 43 afy.

As with Alternative 1, although Alternative 2 may use the Vulcan Materials Dixieland Mine groundwater supply well to meet the project's water supply requirements, use of this well would occur within the constraints of an existing CUP which requires that no more than 200 afy is pumped from the well; such use would result in the persistence of existing conditions relevant to groundwater usage and would not introduce a new use of groundwater from the Coyote Wells Valley Groundwater Basin. In order to be conservative for the purposes of this analysis, it is assumed that the construction water supply for Alterative 2 would be pumped from a private well near Pine Valley and trucked on to the site.

Groundwater Supply and Recharge

Construction of Alternative 2 could affect groundwater supply and recharge if one of the following occurs: (1) the affected groundwater basin is in long-term overdraft conditions; (2) construction activities cause the affected groundwater basin to be in long-term overdraft conditions; (3) substantial drawdown occurs at groundwater wells in the area as a result of construction groundwater pumping; or (4) construction activities redirect natural recharge to groundwater basin(s), such as through the introduction of impervious areas that prevent infiltration. Each of these potential conditions is discussed below.

Overdraft and Drawdown. During construction, Alternative 2 would require a water supply of roughly 43 afy, or roughly 13 percent less than Alternative 1. Construction of Alternative 2 would not pump groundwater from the Ocotillo-Coyote Wells SSA, and would not contribute to overdraft or drawdown effects to local groundwater resources within this SSA, including the Coyote Wells Valley Groundwater Basin (as discussed above). In order to be conservative for the purposes of this analysis, it is assumed that water required during construction would be obtained from the Pine Valley groundwater source discussed under Alternative 1. With the assumption that Alternative 2 would require 13 percent less construction water, the potential for Alternative 2 to result in impacts associated with overdraft and/or drawdown would subsequently also be 13 percent less. Overdraft and/or drawdown effects could occur as a result of groundwater pumping during construction of Alternative 2, but such effects would be temporary in nature and would be reversed by ceasing project pumping, per mitigation requirements. The same mitigation measures discussed under Alternative 1 would be applicable to Alternative 2, as summarized below.

As with the Proposed Action, use of Pine Valley groundwater for construction of Alternative 2 is subject to review by the EPA due to the source location within the surface recharge area of the Campo-Cottonwood SSA.

BMPs identified by the BLM and mitigation measures developed for the Proposed Action are presented in Section 4.19.10 and would minimize potential impacts associated with groundwater overdraft and drawdown. Specifically, Mitigation Measure Water-2 (*Develop a Water Supply Contingency Plan for Construction*) would address potential drawdown impacts, and Mitigation Measure Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*) would address potential impacts associated with overdraft. Mitigation Measures Water-1 and Water-2 would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Recharge. Creation of new impervious surfaces associated with Alternative 2 could interfere with groundwater recharge by reducing the amount of surface area through which precipitation and surface water percolates to underlying aquifers. Due to the construction of 21 fewer wind towers, Alternative 2 would result in proportionately less new impervious surfaces associated with tower foundations and associated permanent disturbance. A comparison of Tables 2-3 and 2-4, presented in Section 2.3, indicate that Alternative 2 would result in permanent disturbance to approximately 148. acres, versus 155.5 acres under the Proposed Action, a difference of approximately 8.0 acres, or 4.5 percent. Due to this difference in permanent disturbance, a proportionately smaller effect on groundwater recharge rates and patterns would occur under Alternative 2; due to the size of the overall site, the change in effect to groundwater recharge rates and patterns is anticipated to be negligible.

Best Management Practices (BMPs) and mitigation measures presented in Section 4.19.10 would minimize potential impacts to groundwater resources that could occur as a result of changes to recharge rates and/or patterns. Specifically, Mitigation Measure Water-4 (*Install pervious and/or high-roughness groundcover where applicable*) would minimize potential impacts associated with alternations to groundcover that could affect recharge rates and patterns, and Mitigation Measure Water-5 (*Design onsite drainage improvements to maximize groundwater recharge*) would minimize potential impacts associated with alterations to drainage patterns that could affect groundwater recharge. These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Construction Site Dewatering. Construction of Alternative 2 would require excavation activities that may encounter shallow groundwater and require construction site dewatering activities. Due to the construction of 21 fewer wind towers (13 percent less than the Proposed Action), the chance that groundwater would be unexpectedly encountered may be slightly less under this alternative; however, Alternative 2 would still construct 137 wind towers and associated infrastructure (roads, O&M building, etc.) and would require the same dewatering activities described for the Proposed Action, if groundwater were unexpectedly encountered during construction.

Best Management Practices and Mitigation Measure Water-6 (*Construction site dewatering management*), presented in Section 4.19.10, would be implemented during construction and would minimize potential impacts associated with construction site dewatering.

Water Supply Reliability. As with the Proposed Action and described in Section 3.20, Alternative 2 does not meet the definition of "project" under SB 610 and a Water Supply Assessment is not required. Mitigation Measure Water-7 (*Develop master Drought Water Management and Water Conservation Education Programs*), presented in Section 4.19.10, is required to address potential drought conditions that could affect water availability, and ensure water supply reliability during construction of Alternative 2.

Surface Water and Drainage Patterns

Compared to the Proposed Action, Alternative 2 would avoid the construction of several towers along the southern portion of Site 2, the northeast portion of Site 1, and the northwest portion of Site 1; these changes would avoid site-specific alterations to drainage patterns that would occur under the Proposed Action. Any increase in surface water runoff resulting from permanent project features associated with Alternative 2 would be location-specific, and such effects would not influence surface runoff in a manner which would result in erosion or flooding on site or off site.

The potential of Alternative 2 to alter the existing drainage pattern(s) of the site would also be minimized through compliance with design specifications and BMPs identified by the BLM, listed in Section 4.19.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential impacts to surface waters and drainage patterns: Water-1 (*Demonstrate compliance with water quality permits*), Water-4 (*Install pervious and/or high-roughness groundcover where applicable*), Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*). Please see Section 4.19.10 for the full text of mitigation measures. These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Jurisdictional Drainages. Surface water and drainage patterns could be adversely affected if jurisdictional drainages are disturbed or altered during construction of Alternative 2. Potential construction impacts to jurisdictional drainages under Alternative 2 would be the same as under the Proposed Action, except where the exclusion of 21 wind towers under Alternative 2 would avoid associated road crossings of jurisdictional drainages. These potential differences would be site-specific, and would not alter the overall nature and magnitude of construction impacts to jurisdictional drainages.

Stormwater Drainage Systems

The construction of Alternative 2 would not introduce any stormwater drainage systems to the area, and the removal of 21 wind towers from the Proposed Action site plan would not alter the potential to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. No mitigation measures are required to address potential effects to existing or planned stormwater drainage systems.

There is potential for construction of Alternative 2 to contribute sources of polluted runoff if an accidental leak or release of harmful materials were to occur during construction activities. This potential would be marginally less under Alternative 2 than under the Proposed Action due to the removal of 21 wind towers from the site plan. With implementation of Mitigation Measures Water-9 (*Construction SWPPP Specifications*) and Water-10 (*Accidental spill control and environmental training*), potential impacts associated with the creation of polluted runoff would be minimized and/or avoided. These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Flood Hazard Areas

The removal of 21 towers from the site plan for Alternative 2 would not avoid potential impacts associated with the placement of permanent infrastructure in the vicinity of FEMA-designated Flood Hazard Areas. All applicable floodplain management ordinances would be fully complied with in accordance with FEMA's regulations on development in Flood Hazard Areas. The permanent aboveground features associated with Alternative 2 would be designed and engineered to withstand potential flooding and erosion hazards. The potential of Alternative 2 to result in impacts associated with Flood Hazard Areas would be minimized through compliance with BMPs identified by the BLM, listed in Section 4.19.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential impacts associated with Flood Hazard Areas: Water-1 (*Demonstrate compliance with water quality permits*), Water-4 (*Install pervious and/or high-roughness groundcover where applicable*), Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*). These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of sedimentation, and/or through the accidental release of hazardous materials. The same types of soil-disturbing activities would occur during construction of Alternative 2 as during construction of the Proposed Action, except that such actions would not occur in associated with the 21 removed wind towers. Similarly, activities that could result in the accidental release of hazardous materials, such as the use of motorized vehicles and equipment, would not occur for the 21 wind towers to be removed under Alternative 2. Therefore, the potential for water quality degradation to occur as a result of soil erosion and sedimentation or the accidental release of hazardous materials would be marginally less under Alternative 2 than under the Proposed Action; the same BMPs and mitigation measures identified for the Proposed Action and summarized below would be applied to Alternative 2.

Mitigation Measure Water-1 (*Demonstrate Compliance with Water Quality Permits*) would ensure compliance with applicable water quality permits and waste discharge requirements prior to the issuance of construction permits. Mitigation Measure Water-6 (*Construction site dewatering management*) would ensure that any required dewatering activities occur in compliance with applicable BMPs, and that potential water quality impacts associated with dewatering would be minimized. Erosion control features and BMPs included in the federally-required SWPPP would minimize or prevent disturbed and/or exposed materials from mobilizing in such a way that water quality degradation could occur. Mitigation Measure Water-9 (*Construction SWPPP Specifications*) ensures that location-specific BMPs are employed during construction of in order to avoid or minimize potential water quality impacts, and Mitigation Measure Water-10 (*Accidental spill control and environmental training*) would minimize the potential for accidental spills of hazardous or potentially hazardous materials to occur, avoiding associated water quality impacts.

Mudflow Hazards

As described in Section 2.1.3.1 (Structure and Facilities), geotechnical studies would be completed prior to construction, and the results of these studies would be used to appropriately design and site project infrastructure. Alternative 2 would construct 21 fewer wind towers than the Proposed Action and would result in a proportionately smaller potential to introduce infrastructure to mudflow hazards. However, all project infrastructure would be designed per the aforementioned geotechnical studies, and BMPs and mitigation measures would be implemented to minimize potential impacts associated with mudflow hazards. Specifically, Mitigation Measure Water-8 (*Flood and Erosion Structure Damage Protection*) would ensure that infrastructure is sufficiently protected against the stressors of potential mudflow, thus minimizing the potential for project features to be damaged by or result in damage from mudflow.

Operation and Maintenance

The removal of 21 wind towers under Alternative 2 would not alter water supply requirements associated with operation and maintenance; water requirements associated with the O&M building would be approximately 0.19 afy. It is not anticipated that a water supply would be required to wash WTG blades during operation. As previously described, for the purposes of being conservative in this assessment it is assumed that operational water would be obtained from the Pine Valley groundwater source. Drinking water for O&M staff would be supplied from a regional commercial drinking water bottling company.

Groundwater Supply and Recharge

The discussion of potential construction impacts provided above under "Construction" describes specific scenarios that could result in impacts to groundwater supply and recharge. Each of these potential conditions is discussed below.

Overdraft and Drawdown. Operation and maintenance of Alternative 2 would have the same water supply requirements as operation and maintenance of Alternative 1. As described in Section 4.19.3 and above, mitigation measures recommended during construction would include groundwater monitoring to assess the response of local groundwater levels to project-related pumping activities, in order to avoid or minimize potential overdraft and/or drawdown effects. Operation and maintenance of Alternative 2 would have the potential for minimal effect on groundwater supplies associated with overdraft and drawdown.

Recharge. Groundwater recharge rates and patterns would be affected by the introduction of permanent aboveground infrastructure. During operation and maintenance of Alternative 2, compared to the Proposed Action, approximately 4.5 percent less new impervious area would be present, and the associated site-specific alterations to local drainage patterns and recharge rates would also not be introduced. All other effects associated with groundwater recharge rates and patterns would be the same as described for the Proposed Action, and the BMPs and mitigation measures provided in Section 4.19.10 of this EIS/EIR would be required to minimize and/or avoid potential impacts.

Construction Site Dewatering. Operation and maintenance of Alternative 2 would not include excavation activities that could require dewatering activities; no impact associated with dewatering would occur.

Water Supply Reliability. Operation of Alternative 2 would require the same water supply for sanitary and fire suppression purposes described for the Proposed Action; no effect on water supply reliability would occur.

Surface Water and Drainage Patterns

Operation and maintenance of Alternative 2 would include the routine maintenance and occasional repair (as needed) of infrastructure installed during the construction period. Due to the introduction of 21 fewer wind towers under this alternative than under the Proposed Action, proportionately less operation and maintenance activities would be required. Operation and maintenance would not substantially alter existing drainage patters or result in substantial erosion, siltation, or flooding on or off site. No additional mitigation measures are necessary.

Stormwater Drainage Systems

Operation and maintenance of Alternative 2 would not introduce any new stormwater drainage system(s), and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As with the Proposed Action, Alternative 2 would include an approximately 10-foot by 14-foot oil containment building within the boundary of the O&M yard, as well as a septic system and leach field which would be permitted through Imperial County. Operation and maintenance of Alternative 2 would not provide substantial additional sources of polluted runoff.

Flood Hazard Areas

The removal of 21 wind towers under Alternative 2 would not alter potential impacts associated with Flood Hazard Areas during operation and maintenance. All permanent infrastructure would be designed to withstand potential flooding and erosion hazards. Operation and maintenance activities would not introduce new infrastructure or activities with the potential to impede or redirect flood flows such that new impacts would occur.

Water Quality

The same types of operation and maintenance activities that would have the potential to affect water quality would occur under Alternative 2 as under the Proposed Action, except as related to the 21 wind towers not included in Alternative 2. For instance, road improvements or repairs that would be necessary to maintain access throughout the site but could result in soil erosion and sedimentation that may adversely affect water quality would not occur for 21 towers that would be included in the Proposed Action. A Hazardous Materials Business Plan/Spill Prevention Control and Countermeasures Plan would be implemented to ensure that adequate containment would be provided to control accidental spills, that adequate spill response equipment and absorbents would be readily available, and that personnel would be properly trained in how to control and clean up any potential spills (OE, 2010). Operation and maintenance of Alternative 2 would not introduce substantial new potential for water quality impacts to occur, and no new mitigation measures are required.

Mudflow Hazards

Operations and maintenance of Alternative 2 would not introduce any infrastructure or activities that would result in new mudflow hazards. No additional mitigation measures are required.

Decommissioning

Decommissioning of Alternative 2 would be the same as decommissioning of the Proposed Action, except that 21 fewer wind towers would need to be removed and disposed of, and potential impacts associated with decommissioning would be proportionately less under Alternative 2 than under the Proposed Action. A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS/ROD, and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of hydrology and water resources from potentially adverse impacts.

Groundwater Supply and Recharge

The discussion of potential impacts provided above under "Construction" describes specific scenarios that could result in impacts to groundwater supply and recharge. Each of these potential conditions is discussed below.

Overdraft and Drawdown. The Coyote Wells Valley Groundwater Basin, underlying the Alternative 2 site, would not be used to meet decommissioning water requirements, and decommissioning of Alternative 2 would not contribute to overdraft and/or drawdown in the Coyote Wells Valley Groundwater Basin or the Ocotillo-Coyote Wells SSA. As previously mentioned, if the Vulcan Materials Dixieland Mine groundwater supply well is used for the project, such use would occur within the constraints of an existing CUP and would not introduce new uses of this groundwater source. Groundwater monitoring and reporting that would be conducted for the use of Pine Valley groundwater during decommissioning activities would avoid and/or minimize potential overdraft and drawdown impacts (mitigation measures are summarized below and presented in detail in Section 4.19.10).

Recharge. As with the Proposed Action, decommissioning of Alternative 2 would include returning the site as closely as reasonable to pre-construction conditions. Due to 21 fewer wind towers being constructed under Alternative 2, the approximately five-foot-thick portion of each concrete tower foundation that would be left below the ground surface during decommissioning would not occur at 21 locations that would occur under the Proposed Action, and associated site-specific alterations to local recharge patterns would not occur. This difference would have a negligible effect on groundwater recharge rates and patterns; the nature and magnitude of this impact of Alternative 2 would be the same as for the Proposed Action.

Construction Site Dewatering. Decommissioning of Alternative 2 would include excavation activities to remove infrastructure to a depth of three feet below the ground surface that would be the same as under the Proposed Action, except that 21 fewer wind towers would need to be removed and a proportionately lower probability of unexpectedly encountering groundwater would occur. A decommissioning plan would be implemented prior to decommissioning activities, and would include BMPs consistent with the BLM Wind Energy Program EIS/ROD and similar to the BMPs implemented with construction of Alternative 2 (presented below in Section 4.19.10). As such, dewatering BMPs would be implemented during decommissioning activities, as necessary.

Water Supply Reliability. Alternative 2 does not meet the intent of the definition of "project" under SB 610 and a Water Supply Assessment is not required. Mitigation Measure Water-7 (*Develop master Drought Water Management and Water Conservation Education Programs*), presented in Section 4.19.10, is required to address potential drought conditions that could affect water availability, and ensure water supply reliability during decommissioning of Alternative 2.

Surface Water and Drainage Patterns. Potential impacts associated with surface water and drainage patterns during decommissioning of Alternative 2 would be the same as for the Proposed Action, except where they would not occur in associated with the 21 wind towers that would not need to be decommissioned under Alternative 2, compared to the Proposed Action. Decommissioning of Alternative 2 would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff such that erosion, siltation, or flooding on or off site would occur, and no additional mitigation measures are required.

Jurisdictional Drainages. Surface water and drainage patterns could be adversely affected if jurisdictional drainages are disturbed or altered during decommissioning of Alternative 2. Potential decommissioning impacts to jurisdictional drainages under Alternative 2 would be the same as under the Proposed Action, except where the exclusion of 21 wind towers under Alternative 2 would avoid associated road crossings of jurisdictional drainages, and such roadways would subsequently not need to be restored during decommissioning. These potential differences would be site-specific, and would not alter the overall nature and magnitude of decommissioning impacts to jurisdictional drainages. Implementation of the decommissioning plan would include BMPs consistent with the BLM Wind Energy Program Programmatic EIS/ROD and similar to the BMPs implemented with construction of Alternative 2 (presented below in Section 4.19.10), including as relevant to potential water quality impacts.

Flood Hazard Areas

Decommissioning of Alternative 2 would remove infrastructure from the project site, and would remove potential impacts introduced during construction of Alternative 2 associated with placing structures within a Flood Hazard Area such that flood flows could be impeded or redirected.

Water Quality

Soil-disturbing activities that would occur during decommissioning of Alternative 2 would have the potential to result in erosion (transport) and sedimentation (delivery) that could degrade water quality in the same way as the Proposed Action, except where the 21 wind towers not included in Alternative 2 would not need to be decommissioned, and associated soil-disturbing activities would not occur. As with the Proposed Action, decommissioning of Alternative 2 would involve the handling and disposal of substantial quantities of solid wastes and industrial wastes, including fluids such as lubricating oils, hydraulic fluids, and coolants drained from the turbine components. The handling and disposal of hazardous materials during decommissioning would introduce a greater potential for an accidental release and associated water quality degradation than would occur during construction of Alternative 2; however, as described above, a decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS/ROD, and would require BMPs and stipulations similar to those applied during construction activities, including as related to the proper handling and storage of potentially hazardous materials.

Stormwater Drainage Systems

Decommissioning of Alternative 2 would not introduce a new stormwater drainage system and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As described above, hazardous materials would be handled and disposed of during decommissioning activities, and would introduce the potential for adverse water quality impacts to occur. However, all hazardous and potentially hazardous materials would be handled, stored, and disposed of in compliance with a decommissioning plan to avoid and/or minimize adverse effects, and decommissioning activities would therefore not provide substantial additional sources of polluted runoff.

Mudflow Hazards

Decommissioning activities would remove project infrastructure from the site, and would restore the site to conditions comparable to pre-construction. Infrastructure introduced during construction of Alternative 2 would be removed and would no longer be subject to inundation by mudflow, and potential adverse effects associated with mudflow hazards would be decreased.

4.19.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 2 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.19.2. Only those significance criteria which were determined in Section 4.19.2 to be relevant to the project are addressed below.

Construction

- **WR-1.** Construction of Alternative 2 would not result no impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Impacts associated with the depletion of groundwater resources and interference with groundwater recharge would be potentially significant due to overdraft conditions, drawdown at wells in the vicinity, alteration of groundwater recharge rates and patterns due to the introduction of impermeable surfaces, and/or unexpectedly encountering perched groundwater during construction activities. However, all potential impacts associated with groundwater supply and recharge would be reduced to a less-than-significant level with implementation of BMPs and mitigation measures listed in Section 4.19.10. Potential impacts of construction to groundwater resources would be less than significant, such that a net deficit in aquifer volume or lowering of the local groundwater table would not occur.
- **WR-3** and **WR-4.** Construction of Alternative 2 would include earth-disturbing activities and the installation of new infrastructure that would introduce the potential to substantially alter existing drainage patterns of the site, such that erosion, siltation, and/or flooding on or off site could occur. However, with implementation of BMPs and mitigation measures listed in Section 4.19.10, potential impacts would be reduced to a less-than-significant level.
- **WR-5.** Alternative 2 does not include installation of new stormwater drainage systems, and would not affect existing stormwater drainage systems. However, due to earth-disturbing activities that would occur during construction, and the use of potentially hazardous materials required to operate construction equipment and machinery, construction of Alternative 2 would introduce the potential to create additional sources of polluted runoff. Implementation of BMPs and mitigation measures listed

in Section 4.19.10 would ensure that potential impacts associated with the creation of polluted runoff would be less than significant.

- **WR-6.** All potential water quality impacts associated with construction of Alternative 2 are characterized in the impact discussions summarized above; construction of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** During construction of Alternative 2, new infrastructure would be installed within and adjacent to designated Flood Hazard Areas, and in the vicinity of areas subject to mudflow hazards; construction of Alternative 2 would therefore introduce the potential to result in significant impacts associated with impeding or redirecting flood flows, and/or inundation by mudflow. With implementation of BMPs and mitigation measures listed in Section 4.19.10, these potential impacts would be less than significant.

Operation and Maintenance

- **WR-1.** Operation and maintenance of Alternative 2 would not result no impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Potential impacts of operation and maintenance associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant, as no new infrastructure or activities with the potential to affect groundwater resources would be introduced.
- **WR-3** and **WR-4.** Operation and maintenance of Alternative 2 would not substantially alter existing drainage patterns of the site, and potential impacts associated with erosion, siltation, and/or flooding occurring on or off site would be less than significant.
- **WR-5.** Operation and maintenance of Alternative 2 would include the handling, storage, and disposal of substantial amounts of harmful and potentially hazardous materials, and would therefore introduce the potential to result in significant impacts associated with the creation of additional sources of polluted runoff, if such materials were accidentally released and/or spilled. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that hazardous materials would be properly handled, stored, and disposed of, and that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with operation and maintenance of Alternative 2 are characterized in the impact discussions summarized above; operation and maintenance of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** After the completion of construction activities, no new infrastructure or activities that could introduce significant impacts associated with impeding or redirecting flood flows and/or inundation by mudflow would occur; during operation and maintenance of Alternative 2, such impacts would be less than significant.

Decommissioning

- **WR-1.** Decommissioning of Alternative 2 would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Potential impacts of decommissioning associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant, as no new infrastructure or activities with the potential to affect groundwater resources would be introduced.
- **WR-3** and **WR-4.** Decommissioning of Alternative 2 would include earth-disturbing activities including excavation and grading to restore original, pre-construction land contours as much as possible, and these alterations would introduce the potential to cause erosion, siltation, and/or flooding on or off site, similar to such impacts during construction of Alternative 2. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would reduce potential impacts to a less-than-significant level.
- **WR-5.** Decommissioning of Alternative 2 would include the handling, storage, and disposal of substantial amounts of harmful and potentially hazardous materials, and would therefore introduce the potential to result in significant impacts associated with the creation of additional sources of polluted runoff, if such materials were accidentally released and/or spilled. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that hazardous materials would be properly handled, stored, and disposed of, and that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with decommissioning of Alternative 2 are characterized in the impact discussions summarized above; decommissioning of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** The removal of infrastructure from areas within and adjacent to flood hazard areas and areas subject to inundation by mudflow that would occur during decommissioning of Alternative 2 would decrease adverse effects associated with the construction of such infrastructure, and potentially result in beneficial effects associated with the removal of infrastructure from areas prone to flooding and mudflow hazards.

4.19.5 Alternative 3: 105 Wind Turbine Generators

Alternative 3 would include 53 fewer WTGs than the Proposed Action, as described in Section 2.3.2 of this EIS/EIR. Compared to the Proposed Action, the turbines eliminated under this alternative include 16 in Site 2, 22 in the northeast portion of Site 1, and 12 along the perimeter of the project in the northwest portion of Site 1. As such, under Alternative 3 there would be no construction on Site 2 and no construction on the northeast portion of Site 1.

4.19.5.1 Direct and Indirect Impacts

Alternative 3 would be subject to the same water quality standards and waste discharge requirements described in Section 4.19.3 for the Proposed Action. Mitigation Measure Water-1 (*Demonstrate Compliance with Water Quality Permits*) would ensure compliance with all water quality standards and waste discharge requirements during construction, operation and maintenance, and decommissioning of Alternative 3. Therefore, potential impacts associated with permit compliance are the same for all three project phases, and are not addressed further in this discussion for Alternative 3.

Construction

Construction of Alternative 3 would require a water supply for concrete batching, road maintenance, and dust suppression. Due to the construction of 53 fewer towers than the Proposed Action, a proportionately lower quantity of water would be required for concrete batching and roadwork, including dust suppression. The Proposed Action would construction 158 WTGs and Alternative 3 would construct 105 WTGs, a difference of approximately 35 percent. As described under Alternative 2, during construction, water would be required for manufacturing of concrete foundations for common facilities such as the O&M building and the substation, in addition to the WTG foundations; water would also be required for common facilities such as maintenance and dust suppression along roads. Therefore, an exact extrapolation cannot be made between the number of WTGs constructed and the volume of water required during construction. However, for the purposes of quantifying potential impacts of Alternative 3 to water resources and providing a basis of comparison between the alternatives, it is assumed that roughly 35 percent less water would be required for construction of Alternative 3, in comparison to Alternative 1. As such, Alternative 3 would require a construction water supply of roughly 28 afy.

As with the Proposed Action, Alternative 3 would not introduce new uses of groundwater from the Coyote Wells Valley Groundwater Basin. In order to be conservative in this assessment of potential impacts, it is assumed that the construction water supply would be pumped from a private well near Pine Valley and trucked on to the site.

Groundwater Supply and Recharge

Construction of the Alternative 3 could affect groundwater supply and recharge if one of the following occurs: (1) the affected groundwater basin is in long-term overdraft conditions; (2) construction activities cause the affected groundwater basin to be in long-term overdraft conditions; (3) substantial drawdown occurs at groundwater wells in the area as a result of construction groundwater pumping; or (4) construction activities redirect natural recharge to groundwater basin(s), such as through the introduction of impervious areas that prevent infiltration. Each of these potential conditions is discussed below.

Overdraft and Drawdown. During construction, Alternative 3 would require a water supply of roughly 28 afy, or roughly 35 percent less than Alternative 1. Construction of Alternative 3 would not pump groundwater from the Ocotillo-Coyote Wells SSA, and would not contribute to overdraft or drawdown effects to local groundwater resources within this SSA. It is assumed that water required during construction would be obtained from the same Pine Valley groundwater well(s) discussed under Alternative 1; however, with the assumption that Alternative 3 would require 35 percent less construction water, the potential for Alternative 3 to result in impacts associated with overdraft and/or drawdown would subsequently also be 35 percent less. Overdraft and/or drawdown effects could occur as a result of groundwater pumping during construction of Alternative 3, but such effects would be temporary in nature and would be reversed by ceasing project pumping, per mitigation requirements. The same mitigation measures discussed under Alternative 1 would be applicable to Alternative 2, as summarized below.

BMPs identified by the BLM and mitigation measures developed for the Proposed Action are presented in Section 4.19.10 and would minimize potential impacts associated with groundwater overdraft and drawdown. Specifically, Mitigation Measure Water-2 (*Develop a Water Supply Contingency Plan for Construction*) would address potential drawdown impacts, and Mitigation Measure Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*) would address potential impacts associated with overdraft. Mitigation Measures Water-1 and Water-2 would address potential impacts of Alternative 3 in the same ways they would address potential impacts of the Proposed Action.

Recharge. Creation of new impervious surfaces associated with Alternative 3 could interfere with groundwater recharge by reducing the amount of surface area through which precipitation and surface water percolates to underlying aquifers. Due to the construction of 53 fewer wind towers, Alternative 3 would result in proportionately less new impervious surfaces associated with tower foundations and associated permanent disturbance. A comparison of Tables 2-3 and 2-4, presented in Section 2.3, indicate that Alternative 3 would result in permanent disturbance to approximately 154.6 acres, versus 171.6 acres under the Proposed Action, a difference of approximately 8.0 acres, or 4.5 percent. Due to this difference in permanent disturbance, a, and a proportionately smaller effect on groundwater recharge rates and patterns.

BMPs and mitigation measures presented in Section 4.19.10 would minimize potential impacts to groundwater resources that could occur as a result of changes to recharge rates and/or patterns. Specifically, Mitigation Measure Water-4 (*Install pervious and/or high-roughness groundcover where applicable*) would minimize potential impacts associated with alternations to groundcover that could affect recharge rates and patterns, and Mitigation Measure Water-5 (*Design onsite drainage improvements to maximize groundwater recharge*) would minimize potential impacts associated with alterations to drainage patterns that could affect groundwater recharge.

Construction Site Dewatering. Construction of Alternative 3 would require excavation activities that may encounter shallow groundwater and require construction site dewatering activities. Due to the construction of 53 fewer wind towers, the chance that groundwater would be unexpectedly encountered may be slightly less under this alternative; however, Alternative 3 would still construct 105 wind towers and associated infrastructure (roads, O&M building, etc.) and would require the same dewatering activities described for the Proposed Action, if groundwater were unexpectedly encountered during construction.

BMPs and Mitigation Measure Water-6 (*Construction site dewatering management*), presented in Section 4.19.10, would be implemented during construction and would minimize potential impacts associated with construction site dewatering. This mitigation measure would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Water Supply Reliability. As with the Proposed Action and described in Section 3.20, the Alternative 3 does not meet the intent of the definition of "project" under SB 610 and a Water Supply Assessment is not required. Mitigation Measure Water-7 (*Develop master Drought Water Management and Water Conservation Education Programs*), presented in Section 4.19.10, is required to address potential drought conditions that could affect water availability, and ensure water supply reliability during construction of Alternative 3. This mitigation measure would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Surface Water and Drainage Patterns

Compared to the Proposed Action, Alternative 3 would avoid the construction of 53 wind towers, subsequently avoiding site-specific alterations to drainage patterns that would occur under the Proposed Action, in association with those towers. No drainage pattern alterations would occur on Site 2 or on the northeast portion of Site 1. Any increase in surface water runoff resulting from permanent project features associated with Alternative 3 would be location-specific, and such effects would not influence surface runoff in a manner which would result in erosion or flooding on site or off site.

The potential of Alternative 3 to alter the existing drainage pattern(s) of the site would also be minimized through compliance with design specifications and BMPs identified by the BLM, listed in Section 4.19.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential impacts to surface waters and drainage patterns: Water-1 (*Demonstrate compliance with water quality permits*), Water-4 (*Install pervious and/or high-roughness groundcover where applicable*), Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*). Please see Section 4.19.10 for the full text of mitigation measures. These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Jurisdictional Drainages. Surface water and drainage patterns could be adversely affected if jurisdictional drainages are disturbed or altered during construction of Alternative 3. Potential construction impacts to jurisdictional drainages under Alternative 3 would be the same as under the Proposed Action, except where the exclusion of 53 wind towers under Alternative 3 would avoid associated road crossings of jurisdictional drainages. These potential differences would be site-specific, and would not alter the overall nature and magnitude of construction impacts to jurisdictional drainages.

Stormwater Drainage Systems

The construction of Alternative 3 would not introduce any stormwater drainage systems to the area, and the removal of 53 wind towers from the Proposed Action site plan would not alter the potential to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. No mitigation measures are required to address potential effects to existing or planned stormwater drainage systems.

There is potential for construction of Alternative 3 to contribute sources of polluted runoff if an accidental leak or release of harmful materials were to occur during construction activities. This potential would be marginally less under Alternative 3 than under the Proposed Action due to the removal of 53 wind towers from the site plan. With implementation of Mitigation Measures Water-9 (*Construction SWPPP Specifications*) and Water-10 (*Accidental spill control and environmental training*), potential impacts associated with the creation of polluted runoff would be minimized and/or avoided. These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Flood Hazard Areas

The removal of 53 towers from the site plan for Alternative 3 would not avoid potential impacts associated with the placement of permanent infrastructure in the vicinity of FEMA-designated Flood Hazard Areas. All applicable floodplain management ordinances would be fully complied with in accordance with FEMA's regulations on development in Flood Hazard Areas. The permanent aboveground features associated with Alternative 3 would be designed and engineered to withstand potential flooding and erosion hazards. The potential of Alternative 3 to result in impacts associated with Flood Hazard Areas would be minimized through compliance with BMPs identified by the BLM, listed in Section 4.19.10. In addition, implementation of the following mitigation measures would be required in order to avoid and/or minimize potential impacts associated with Flood Hazard Areas: Water-1 (*Demonstrate compliance with water quality permits*), Water-4 (*Install pervious and/or high-roughness groundcover where applicable*), Water-8 (*Flood and Erosion Structure Damage Protection*), and Water-9 (*Construction SWPPP Specifications*). These mitigation measures would address potential impacts of Alternative 2 in the same ways they would address potential impacts of the Proposed Action.

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of sedimentation, and/or through the accidental release of hazardous materials. The same types of soil-disturbing activities would occur during construction of Alternative 3 as during construction of the Proposed Action, except that such actions would not occur in associated with the 53 removed wind towers. Similarly, activities that could result in the accidental release of hazardous materials, such as the use of motorized vehicles and equipment, would not occur for the 53 wind towers to be removed under Alternative 3. Therefore, the potential for water quality degradation to occur as a result of soil erosion and sedimentation or the accidental release of hazardous materials would be marginally less under Alternative 3 than under the Proposed Action; the same BMPs and mitigation measures identified for the Proposed Action and summarized below would be applied to Alternative 3.

Mitigation Measure Water-1 (*Demonstrate Compliance with Water Quality Permits*) would ensure compliance with applicable water quality permits and waste discharge requirements prior to the issuance of construction permits. Mitigation Measure Water-6 (*Construction site dewatering management*) would ensure that any required dewatering activities occur in compliance with applicable BMPs, and that potential water quality impacts associated with dewatering would be minimized. Erosion control features and BMPs included in the federally-required SWPPP would minimize or prevent disturbed and/or exposed materials from mobilizing in such a way that water quality degradation could occur. Mitigation Measure Water-9 (*Construction SWPPP Specifications*) ensures that location-specific BMPs are employed during construction of in order to avoid or minimize potential water quality impacts, and Mitigation Measure Water-10 (*Accidental spill control and environmental training*) would minimize the potential for accidental spills of hazardous or potentially hazardous materials to occur, avoiding associated water quality impacts.

Mudflow Hazards

As described in Section 2.1.3.1 (Structure and Facilities), geotechnical studies would be completed prior to construction, and the results of these studies would be used to appropriately design and site project infrastructure. Alternative 3 would construct 53 fewer wind towers than the Proposed Action and would result in a proportionately smaller potential to introduce infrastructure to mudflow hazards. However, all project infrastructure would be designed per the aforementioned geotechnical studies, and BMPs and mitigation measures would be implemented to minimize potential impacts associated with mudflow hazards. Specifically, Mitigation Measure Water-8 (*Flood and Erosion Structure Damage Protection*) would ensure that infrastructure is sufficiently protected against the stressors of potential mudflow, thus minimizing the potential for project features to be damaged by or result in damage from mudflow.

Operation and Maintenance

The removal of 53 wind towers under Alternative 3 would not alter water supply requirements associated with operation and maintenance; water requirements associated with the O&M building would be approximately 0.19 afy. As previously discussed, for the purposes of this assessment it is assumed that operational water would be obtained from the same Pine Valley source used during construction. Drinking water for O&M staff would be supplied from a regional commercial drinking water bottling company.

Groundwater Supply and Recharge

The discussion of potential construction impacts provided above under "Construction" describes specific scenarios that could result in impacts to groundwater supply and recharge. Each of these potential conditions is discussed below.

Overdraft and Drawdown. Operation and maintenance of Alternative 3 would have the same water supply requirements as operation and maintenance of Alternative 1. As described in Section 4.19.3 and above, mitigation measures recommended during construction would include groundwater monitoring to assess the response of local groundwater levels to project-related pumping activities, in order to avoid or minimize potential overdraft and/or drawdown effects. Operation and maintenance of Alternative 3 would have the potential for minimal effect on groundwater supplies associated with overdraft and drawdown.

Recharge. Groundwater recharge rates and patterns would be affected by the introduction of permanent aboveground infrastructure. During operation and maintenance of Alternative 3, compared to the Proposed Action, approximately 10 percent less new impervious area would be present, and the associated site-specific alterations to local drainage patterns and recharge rates would also not be present. All other effects associated with groundwater recharge rates and patterns would be the same as described for the Proposed Action, and the BMPs and mitigation measures provided in Section 4.19.10 of this EIS/EIR would be required minimize and/or avoid potential impacts.

Construction Site Dewatering. Operation and maintenance of Alternative 3 would not include excavation activities that could require dewatering activities; no impact associated with dewatering would occur.

Water Supply Reliability. Operation of Alternative 3 would require the same water supply for sanitary and fire suppression purposes described for the Proposed Action; no effect on water supply reliability would occur.

Surface Water and Drainage Patterns

Operation and maintenance of Alternative 3 would include the routine maintenance and occasional repair (as needed) of infrastructure installed during the construction period. Due to the introduction of 53 fewer wind towers under this alternative than under the Proposed Action, proportionately less operation and maintenance activities would be required. Operation and maintenance would not substantially alter existing drainage patters or result in substantial erosion, siltation, or flooding on or off site. No additional mitigation measures are necessary.

Stormwater Drainage Systems

Operation and maintenance of Alternative 3 would not introduce any new stormwater drainage system(s), and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As with the Proposed Action, Alternative 3 would include an approximately 10-foot by 14-foot oil containment building within the boundary of the O&M yard, as well as a septic system and leach field which would be permitted through Imperial County. Operation and maintenance of Alternative 3 would not provide substantial additional sources of polluted runoff.

Flood Hazard Areas

The removal of 53 wind towers under Alternative 3 would not alter potential impacts associated with Flood Hazard Areas during operation and maintenance. All permanent infrastructure would be designed to withstand potential flooding and erosion hazards. Operation and maintenance activities would not introduce new infrastructure or activities with the potential to impede or redirect flood flows such that new impacts would occur.

Water Quality

The same types of operation and maintenance activities that would have the potential to affect water quality would occur under Alternative 3 as under the Proposed Action, except as related to the 53 wind towers not included in Alternative 3. For instance, road improvements or repairs that would be necessary to maintain access throughout the site but could result in soil erosion and sedimentation that may adversely affect water quality would not occur for 53 towers that would be included in the Proposed Action. A Hazardous Materials Business Plan / Spill Prevention Control and Countermeasures Plan would be implemented to ensure that adequate containment would be provided to control accidental spills, that adequate spill response equipment and absorbents would be readily available, and that personnel would be properly trained in how to control and clean up any potential spills (OE, 2010). Operation and maintenance of Alternative 3 would not introduce substantial new potential for water quality impacts to occur, and no new mitigation measures are required.

Mudflow Hazards

Operations and maintenance of Alternative 3 would not introduce any infrastructure or activities that would result in new mudflow hazards. No additional mitigation measures are required.

Decommissioning

Decommissioning of Alternative 3 would be the same as decommissioning of the Proposed Action, except that 53 fewer wind towers would need to be removed and disposed of, and potential impacts associated with decommissioning would be proportionately less under Alternative 3 than under the Proposed Action. A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS/ROD, and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of hydrology and water resources from potentially adverse impacts.

Groundwater Supply and Recharge

The discussion of potential impacts provided above under "Construction" describes specific scenarios that could result in impacts to groundwater supply and recharge. Each of these potential conditions is discussed below.

Overdraft and Drawdown. The Coyote Wells Valley Groundwater Basin would not be affected by new groundwater uses to meet decommissioning water requirements; as previously discussed, if the Vulan Materials Dixieland Mine groundwater source is used to meet project water requirements, such use would occur within the constraints of an existing CUP, and would not increase uses of the basin or introduce new uses of the basin. Decommissioning of Alternative 3 would have no effect on overdraft and/or drawdown in the Coyote Wells Valley Groundwater Basin or the Ocotillo-Coyote Wells SSA. Groundwater monitoring and reporting that would be conducted for the use of Pine Valley groundwater during decommissioning activities would avoid and/or minimize potential overdraft and drawdown impacts (mitigation measures are summarized below and presented in detail in Section 4.19.10).

Recharge. As with the Proposed Action, decommissioning of Alternative 3 would include returning the site as closely as reasonable to pre-construction conditions. Due to 53 fewer wind towers being constructed under Alternative 3, the approximately five-foot-thick portion of each concrete tower foundation that would be left below the ground surface during decommissioning would not occur at 53 locations that would occur under the Proposed Action, and associated site-specific alterations to local recharge patterns would not occur. This difference would have a negligible effect on groundwater recharge rates and patterns; the nature and magnitude of this impact of Alternative 3 would be the same as for the Proposed Action.

Construction Site Dewatering. Decommissioning of Alternative 3 would include excavation activities to remove infrastructure to a depth of three feet below the ground surface that would be the same as under the Proposed Action, except that 53 fewer wind towers would need to be removed and a proportionately lower probability of unexpectedly encountering groundwater would occur. A decommissioning plan would be implemented prior to decommissioning activities, and would include BMPs consistent with the BLM Wind Energy Program EIS/ROD and similar to the BMPs implemented with construction of Alternative 3 (presented below in Section 4.19.10). As such, dewatering BMPs would be implemented during decommissioning activities, as necessary.

Water Supply Reliability. Alternative 3 does not meet the intent of the definition of "project" under SB 610 and a Water Supply Assessment is not required. Mitigation Measure Water-7 (*Develop master Drought Water Management and Water Conservation Education Programs*), presented in Section 4.19.10, is required to address potential drought conditions that could affect water availability, and ensure water supply reliability during decommissioning of Alternative 3.

Surface Water and Drainage Patterns. Potential impacts associated with surface water and drainage patterns during decommissioning of Alternative 3 would be the same as for the Proposed Action, except where they would not occur in associated with the 53 wind towers that would not need to be decommissioned under Alternative 3, compared to the Proposed Action. Decommissioning of Alternative 3 would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff such that erosion, siltation, or flooding on or off site would occur, and no additional mitigation measures are required.

Jurisdictional Drainages. Surface water and drainage patterns could be adversely affected if jurisdictional drainages are disturbed or altered during decommissioning of Alternative 3. Potential decommissioning impacts to jurisdictional drainages under Alternative 3 would be the same as under the Proposed Action, except where the exclusion of 53 wind towers under Alternative 3 would avoid associated road crossings of jurisdictional drainages, and such roadways would subsequently not need to be restored during decommissioning. These potential differences would be site-specific, and would not alter the overall nature and magnitude of decommissioning impacts to jurisdictional drainages. Implementation of the decommissioning plan would include BMPs consistent with the BLM Wind Energy Program EIS/ROD and similar to the BMPs implemented with construction of Alternative 3 (presented below in Section 4.19.10), including as relevant to potential water quality impacts.

Flood Hazard Areas

Decommissioning of Alternative 3 would remove infrastructure from the project site, and would remove potential impacts introduced during construction of Alternative 3 associated with placing structures within a Flood Hazard Area such that flood flows could be impeded or redirected.

Water Quality

Soil-disturbing activities that would occur during decommissioning of Alternative 3 would have the potential to result in erosion (transport) and sedimentation (delivery) that could degrade water quality in the same way as the Proposed Action, except where the 53 wind towers not included in Alternative 3 would not need to be decommissioned, and associated soil-disturbing activities would not occur. As with the Proposed Action, decommissioning of Alternative 3 would involve the handling and disposal of substantial quantities of solid wastes and industrial wastes, including fluids such as lubricating oils, hydraulic fluids, and coolants drained from the turbine components. The handling and disposal of hazardous materials during decommissioning would introduce a greater potential for an accidental release and associated water quality degradation than would occur during construction of Alternative 3; however, as described above, a decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS / ROD, and would require BMPs and stipulations similar to those applied during construction activities, including as related to the proper handling and storage of potentially hazardous materials.

Stormwater Drainage Systems

Decommissioning of Alternative 3 would not introduce a new stormwater drainage system and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As described above, hazardous materials would be handled and disposed of during decommissioning activities, and would introduce the potential for adverse water quality impacts to occur. However, all hazardous and potentially hazardous materials would be handled, stored, and disposed of in compliance with a decommissioning plan to avoid and/or minimize adverse effects, and decommissioning activities would therefore not provide substantial additional sources of polluted runoff.

Mudflow Hazards

Decommissioning activities would remove project infrastructure from the site, and would restore the site to conditions comparable to pre-construction. Infrastructure introduced during construction of Alternative

3 would be removed and would no longer be subject to inundation by mudflow, and potential adverse effects associated with mudflow hazards would be decreased.

4.19.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 3 (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.19.2. Only those significance criteria which were determined in Section 4.19.2 to be relevant to the project are addressed below.

Construction

- **WR-1.** Construction of Alternative 3 would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Impacts associated with the depletion of groundwater resources and interference with groundwater recharge would be potentially significant due to overdraft conditions, drawdown at wells in the vicinity, alteration of groundwater recharge rates and patterns due to the introduction of impermeable surfaces, and/or unexpectedly encountering perched groundwater during construction activities. However, all potential impacts associated with groundwater supply and recharge would be reduced to a less-than-significant level with implementation of BMPs and mitigation measures listed in Section 4.19.10. Potential impacts of construction to groundwater resources would be less than significant, such that a net deficit in aquifer volume or lowering of the local groundwater table would not occur.
- **WR-3** and **WR-4.** Construction of Alternative 3 would include earth-disturbing activities and the installation of new infrastructure that would introduce the potential to substantially alter existing drainage patterns of the site, such that erosion, siltation, and/or flooding on or off site could occur. However, with implementation of BMPs and mitigation measures listed in Section 4.19.10, potential impacts would be reduced to a less-than-significant level.
- **WR-5.** Alternative 3 does not include installation of new stormwater drainage systems, and would not affect existing stormwater drainage systems. However, due to earth-disturbing activities that would occur during construction, and the use of potentially hazardous materials required to operate construction equipment and machinery, construction of Alternative 3 would introduce the potential to create additional sources of polluted runoff. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with construction of Alternative 3 are characterized in the impact discussions summarized above; construction of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** During construction of Alternative 3, new infrastructure would be installed within and adjacent to designated Flood Hazard Areas, and in the vicinity of areas subject to mudflow hazards; construction of Alternative 3 would therefore introduce the potential to result in significant impacts associated with impeding or redirecting flood flows, and/or inundation by mudflow. With

implementation of BMPs and mitigation measures listed in Section 4.19.10, these potential impacts would be less than significant.

Operation and Maintenance

- **WR-1.** Operation and maintenance of Alternative 3 would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Potential impacts of operation and maintenance associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant, as no new infrastructure or activities with the potential to affect groundwater resources would be introduced.
- **WR-3** and **WR-4.** Operation and maintenance of Alternative 3 would not substantially alter existing drainage patterns of the site, and potential impacts associated with erosion, siltation, and/or flooding occurring on or off site would be less than significant.
- **WR-5.** Operation and maintenance of Alternative 3 would include the handling, storage, and disposal of substantial amounts of harmful and potentially hazardous materials, and would therefore introduce the potential to result in significant impacts associated with the creation of additional sources of polluted runoff, if such materials were accidentally released and/or spilled. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that hazardous materials would be properly handled, stored, and disposed of, and that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with operation and maintenance of Alternative 3 are characterized in the impact discussions summarized above; operation and maintenance of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** After the completion of construction activities, no new infrastructure or activities that could introduce significant impacts associated with impeding or redirecting flood flows and/or inundation by mudflow would occur; during operation and maintenance of Alternative 3, such impacts would be less than significant.

Decommissioning

- **WR-1.** Decommissioning of Alternative 3 would not result in impacts associated with the violation of water quality standards or waste discharge requirements, as construction activities would occur in full compliance with all applicable standards and requirements.
- **WR-2.** Potential impacts of decommissioning associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant, as no new infrastructure or activities with the potential to affect groundwater resources would be introduced.
- **WR-3** and **WR-4.** Decommissioning of Alternative 3 would include earth-disturbing activities including excavation and grading to restore original, pre-construction land contours as much as possible, and these alterations would introduce the potential to cause erosion, siltation, and/or flooding on or off site, similar to such impacts during construction of Alternative 3. Implementation

of BMPs and mitigation measures listed in Section 4.19.10 would reduce potential impacts to a less-than-significant level.

- **WR-5.** Decommissioning of Alternative 3 would include the handling, storage, and disposal of substantial amounts of harmful and potentially hazardous materials, and would therefore introduce the potential to result in significant impacts associated with the creation of additional sources of polluted runoff, if such materials were accidentally released and/or spilled. Implementation of BMPs and mitigation measures listed in Section 4.19.10 would ensure that hazardous materials would be properly handled, stored, and disposed of, and that potential impacts associated with the creation of polluted runoff would be less than significant.
- **WR-6.** All potential water quality impacts associated with decommissioning of Alternative 3 are characterized in the impact discussions summarized above; decommissioning of the project would not otherwise substantially degrade water quality.
- **WR-8** and **WR-10.** The removal of infrastructure from areas within and adjacent to flood hazard areas and areas subject to inundation by mudflow that would occur during decommissioning of Alternative 3 would decrease adverse effects associated with the construction of such infrastructure, and potentially result in beneficial effects associated with the removal of infrastructure from areas prone to flooding and mudflow hazards.

4.19.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.19.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) to the proposed OWEF, no action would occur and existing conditions relevant to water resources would continue. No impact would occur.

4.19.6.2 CEQA Significance Determinations

Alternative 4 to the proposed OWEF would not result in impacts to water resources.

4.19.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.19.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to water resources would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the Proposed Action would occur.

4.19.7.2 CEQA Significance Determinations

Alternative 5 to the proposed OWEF would not result in impacts to water resources.

4.19.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.19.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, impacts to water resources could occur and may be similar to those described for the Proposed Action.

4.19.8.2 CEQA Significance Determinations

Alternative 6 to the proposed OWEF would not result in impacts to water resources related to the OWEF. However, the construction and operation of another wind energy development on the OWEF could have the same CEQA significance determinations as Alternative 1.

4.19.9 Cumulative Impacts

Cumulative impacts to water resources resulting from the proposed OWEF would occur if similar impacts of other projects located within the geographic extent of this analysis were to occur during the same time period as those impacts of the proposed OWEF during the construction, operation and maintenance, and decommissioning phases.

4.19.9.1 Geographic Extent/Context

The geographic extent of this cumulative impacts analysis for water resources impacts under the proposed OWEF and alternatives includes the EPA-designated surface recharge areas for the SSAs within which proposed activities would occur. The proposed OWEF and alternatives are located within the surface recharge area of the Ocotillo-Coyote Wells SSA, while the proposed construction, maintenance, and decommissioning water source is located within the surface recharge area of the Campo-Cottonwood SSA. Therefore, the geographic extent of cumulative construction, maintenance, and decommissioning impacts includes both the Ocotillo-Coyote Wells SSA and the Campo-Cottonwood SSA.

As previously discussed, in order to be conservative it is assumed that the project's water supply would be obtained from the Pine Valley groundwater source, within the Campo-Cottonwood SSA. If other potential water source(s) are used to meet the project's water requirements, such use would occur in compliance with existing plans and/or permits to avoid adverse effects. With the exception of the Pine Valley groundwater source, use of the other potential water sources (including the City of Brawley, Seeley County Water District, Vulan Materials Dixieland Mine groundwater, and/or IID West-Side Canal) would not have potential to contribute to potential cumulative effects because these water sources are managed under existing plans and/or permits to avoid adverse effects (see discussion provided in Section 3.20 and above, in Section 4.19.3). Therefore, this assessment of potential cumulative impacts is focused on the Pine Valley groundwater source, with respect to water supply.

As mentioned above, a cumulative impact to water resources could occur if other projects within the geographic scope of this analysis (the surface recharge areas for the Ocotillo-Coyote Wells SSA and the Campo Cottonwood SSA) occur during the same time period as impacts of the propsed OWEF or an alternative. For the purpose of defining temporal scope of this cumulative analysis, the aforementioned time period is considered the period within which a water resources impact of the proposed OWEF or an alternative is actively present. For instance, if project-related groundwater pumping results in overdraft conditions, a cumulative impact could occur if another project within the geographic scope also contributes to overdraft conditions to the affected groundwater resource while the project-related overdraft effect is present. The temporal scope of this analysis is discussed further in the following sections.

The EPA-designated surface recharge areas for SSAs within which proposed activities are located provide an appropriate geographic extent of cumulative analysis because surface water and groundwater resources are captured within these areas. Figure 3.20-4 portrays the Ocotillo-Coyote Wells SSA surface recharge area, and Figure 3.20-5 portrays the Campo-Cottonwood SSA surface recharge area.

4.19.9.2 Existing Cumulative Conditions

This section discusses past and ongoing projects in the cumulative analysis area described above. A wide variety of past and present development projects contribute to the cumulative conditions for water resources in the cumulative impact analysis area. As mentioned above, the geographic extent of cumulative impact analysis for water resources is defined as the surface recharge area of the Ocotillo-Coyote Wells SSA, where the proposed OWEF site is located; and the surface recharge area of the Campo-Cottonwood SSA, where the project's construction, maintenance, and decommissioning water source is located; as previously described, although other potential water sources have been identified for the project, the Pine Valley groundwater source is the only one considered to have potential to contribute to cumulative effects with respect to water supply and therefore, in order to be conservative in this assessment of cumulative effects, it is assumed that the Pine Valley groundwater source would be used to meet all project water supply requirements. Cumulative conditions for each of these SSAs, as relevant to water resources impacts of the proposed OWEF, are described below.

Ocotillo-Coyote Wells Sole Source Aquifer

Existing cumulative conditions relevant to water resources within the surface recharge area of the Ocotillo-Coyote Wells SSA are comprised of projects which previously and/or currently: utilize local groundwater resources as a project water supply; substantially alter surface drainage patterns; result in flooding associated with new impervious areas and/or the placement of permanent infrastructure; include earth-disturbing activities that result in erosion and sedimentation; or result in hazards and/or inundation by mudflow. The community of Ocotillo is located within this area, and characterizes existing cumulative conditions with rural residential developments which use local groundwater for potable and non-potable purposes. Cumulative conditions are also characterized by drainage pattern alterations and potential flooding hazards associated with the introduction of impermeable surfaces such as buildings and roadways within and around the community of Ocotillo. Table 3.14-1 (Population Profile and Projections of the Study Area, 2010-2030), presented in Section 3.14 of this EIS/EIR, indicates that the population of the community of Ocotillo was 312 in 2010. Figure 3.20-4 shows that several highways and one railroad line cross through the Ocotillo-Coyote Wells SSA; these features contribute to existing cumulative conditions because their impervious surfaces alter drainage patterns, potentially contribute to localized flooding effects, and result in site-specific alterations to groundwater recharge rates and patterns. Collectively, existing cumulative conditions within the Ocotillo-Coyote Wells SSA, as relevant to water resources, are characterized by residential and community development, and transportation infrastructure.

Campo-Cottonwood Sole Source Aquifer

The Campo-Cottonwood SSA is included in the cumulative scenario because this is where the Pine Valley groundwater source is located; as discussed, in order to be conservative in this assessment of potential cumulative effects, it is assumed that the Pine Valley groundwater source would be used to meet all construction, maintenance, and decommissioning water requirements of the project. Groundwater resources in the Pine Valley area are available in fractured rock formations and recharge in direct response to precipitation events and surface water infiltration. As discussed in Section 3.20.1.2, the identified well is located within the surface recharge area of the Campo-Cottonwood SSA, but not within one of the three defined groundwater basins that are encompassed by the Campo-Cottonwood SSA. This is a non-adjudicated area, which means that permits are not required of property owners for the use of groundwater underlying their property. Therefore, records are not available to characterize current or past rates of groundwater consumption in Pine Valley. However, Pine Valley is located within the Cleveland National Forest, subject to jurisdiction of the USDA Forest Service (Pacific Southwest Region), and the private well identified as a water source during construction, maintenance, and decommissioning is located on a private in-holding within the Forest. The Forest Visitor Map for Cleveland National Forest shows that projects in the vicinity of Pine Valley are generally recreational and Forest-maintained, including the following:

- Bear Valley OHV Trailhead;
- Pine Creek Trailhead;
- Glen Cliff Fire Station; and
- Sunrise Scenic Byway.

Of the projects listed above, the only project which is reasonably assumed to require an ongoing water supply include the Glen Cliff Fire Station. This project is located within the Pine Valley area and could use groundwater pumped from the same fractured rock system as the Pine Valley well proposed for use under the proposed OWEF or an alternative.

As shown on Figure 3.20-5 and described above, Pine Valley is located in the northern portion of the Campo-Cottonwood SSA, which captures a geographic area that extends far beyond Pine Valley. As described in Section 3.20.1.2 (see "Campo-Cottonwood Sole Source Aquifer"), the surface area of the Campo-Cottonwood SSA encompasses three small groundwater basins, the Cottonwood Valley, Campo Valley, and Potrero Valley Groundwater Basins. Each of these defined basins is bounded by impermeable rock material, and therefore would not receive recharge from groundwater resources in Pine Valley, which is not underlain by a defined groundwater basin. The proposed OWEF activities that would occur in the Pine Valley area are limited to groundwater pumping and monitoring at an existing groundwater well which is currently in active use as a source of non-potable water. Use of the well to meet water requirements of the proposed OWEF would not otherwise represent changes from existing activities in the

Campo-Cottonwood SSA. As result, for the purposes of this cumulative impact analysis, existing and reasonably foreseeable future projects within the Campo-Cottonwood SSA would only have the potential to result in and/or combine with water impacts related to the OWEF to the extent those impacts are related to groundwater supply and availability. Moreover, due to the considerable size of the Campo-Cottonwood SSA surface area and the lack of connectivity between Pine Valley groundwater and defined groundwater basins elsewhere in this SSA, existing cumulative conditions in the Campo-Cottonwood SSA, as relevant to cumulative water resources impacts of the proposed OWEF, are further limited to the Pine Valley area, as described above.

Potential cumulative impacts that could occur in the Campo-Cottonwood SSA are addressed below in Sections 4.19.9.4 (Construction), 4.19.9.5 (Operation and Maintenance), and 4.19.9.6 (Decommissioning).

4.19.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider to be reasonably foreseeable. Table 4.1.2 identifies projects from Table 4.1-1 on an issue-area-specific basis. The cumulative projects relevant to the geographic extent of this cumulative analysis of water resources impacts associated with the proposed OWEF are described above, in Section 4.19.9.2 (Existing Cumulative Conditions). Most of the projects presented in Tables 4.1-1 and 4.1-2 and described above have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not yet been completed for projects determined to be located within the geographic extent of this cumulative analysis, the potential effects of all projects comprising the existing and reasonably foreseeable cumulative conditions relevant to the proposed OWEF were considered in the cumulative impacts analyses in this EIS/EIR.

Ocotillo-Coyote Wells Sole Source Aquifer

Reasonably foreseeable projects that may occur within the surface recharge area of the Ocotillo-Coyote Wells SSA are anticipated to be representative of projects which currently characterize the cumulative conditions for this area. Table 4.1-1, presented in Section 4.1 of this EIS/EIR, lists cumulative projects in the vicinity of the proposed OWEF site and surrounding area. Of the cumulative projects listed in Table 4.1-1 and identified on Figure 4.1-1a, following is a list and summary of projects which comprise the cumulative conditions for water resources within the Ocotillo-Coyote Wells SSA:

- **Sunrise Powerlink** (transmission line). The Sunrise Powerlink project is a 150-mile long transmission line route from SDG&E's Imperial Valley Substation near El Centro to SDG&E's Peñasquitos Substation near Interstate 805, in coastal San Diego. Construction occurs through the surface recharge area of the Ocotillo-Coyote Wells SSA and, at the time of preparation of this Final EIS/EIR, construction of the Sunrise Powerlink project is underway through the proposed OWEF area. The Sunise Powerlink project requires a water supply for dewatering and dust control during construction; it is not anticipated that an operational water supply would be required. Based on personal communications between Aspen Environemntal Group personnel and Imperial Irrigation District personnel, the use of surface water from IID for the purposes of the Sunrise Powerlink project is considered infeasible (Strong, 2011). The water supply that would be used in constructing the portion of the Sunrise Powerlink project located within the Ocotillo-Coyote Wells SSA is not known at this time.

- **Coyote Wells Specific Plan** (residential development). The Coyote Wells Specific Plan is proposed by Wind Zero Group, Inc., and would construct a residential development including 22 parcels and ten land use designations. It is anticipated that a short-term water supply would be required during construction for concrete manufacturing, dust control, and potential other uses, while a long-term operational water supply would be required for both potable and non-potable purposes. The water supply that would be used in constructing the Coyote Wells Specific Plan may be local groundwater; as described in the *Revised Hydrology and Water Quality Component for the Coyote Wells Specific Plan EIR*, groundwater overdraft conditions would be mitigated under the Specific Plan through a groundwater management plan (Leighton, 2010).

A 2004 Groundwater Basin Hydrology and Groundwater Modeling Study of the Ocotillo/Coyote Wells area conducted in support of U.S. Gypsum Company mining operations (B-E, 2004) included estimates of applied water use for communities in the area, based upon estimated rates of population growth. These water use estimates are provided in the Table 4.19-2, presented below.

Table 4.19-2. Historic and Projected Applied Water Use in the Ocotillo-Coyote Wells Area

Community	Acre-Feet per Year						
	1975	1980	1990	1995	2010	2025	*Total*
Painted Gorge (a)	2.1	2.2	2.6	2.7	3.4	4.2	*17.2*
Ocotillo(b)	72.3	77.6	89.3	95.8	118.0	145.3	*598.3*
West Texas(a)	0.5	0.6	0.7	0.7	0.9	1.1	*4.5*
Nomirage(c)	7.5	8.1	9.3	10.0	12.3	15.1	*62.3*
Yuha Estates(c)	0.9	1.0	1.1	1.2	1.5	1.8	*7.5*
TOTAL	83.3	89.5	103.0	110.4	136.1	167.5	*689.8*

Source: B-E, 2004.

The cumulative projects summarized in the bullet list above and the applied water use projections presented in Table 4.19-2 collectively provide a reasonable characterization of existing cumulative conditions within the surface recharge area of the Ocotillo-Coyote Wells SSA, as relevant to water resources. Potential cumulative impacts that could occur in the Ocotillo-Coyote Wells SSA are addressed below in Sections 4.19.9.4 (Construction), 4.19.9.5 (Operation and Maintenance), and 4.19.9.6 (Decommissioning).

Campo-Cottonwood Sole Source Aquifer

In addition to the Pine Valley-area projects summarized in Section 4.19.9.2 (Existing Cumulative Conditions), projects within the surface recharge area of the Campo-Cottonwood SSA which comprise the reasonably foreseeable projects relevant to water resources are listed below. These projects, which are described in detail in Table 4.1-1 and identified on Figure 4.1-1a, are generally listed in an east to west direction.

- Sunrise Powerlink (transmission line).
- Ketchum Ranch (residential development).
- Pacific Bell Cell Site (cell tower).
- Grizzle (residential subdivision).
- Debenham Energy (wind testing site).
- Boulevard Border Patrol Station (U.S. Border Patrol).
- Dart (residential subdivision).
- Ribbonwood Road Sightline Improvement (public facilities).
- White Star Cell Tower (cell tower).
- Horizon Tower (cell tower).
- Outdoor World Tower (cell tower).
- Campo Landfill Project (landfill).

- Golden Acorn Casino and Travel Center (commercial).
- La Posta Casino (commercial).
- Borrow Pit Miller Creek (reclamation plan).
- Ozbirn Cingular Cell Tower (cell tower).
- Vista Cell Tower (cell tower).
- Gasoline Curve Cell Tower (cell tower).
- Volli (residential subdivision).
- La Posta Mountain Warfare Training Facility (military).
- Davis-Inman (residential subdivision).
- Campo Hills Commercial Building (commercial).
- Adelaides Roman Catholic Church (church).
- Star Ranch (residential development).
- Buckman Springs Borrow Reclamation Plan (reclamation plan).
- Harvest Glen (residential subdivision).
- Bartlett (residential subdivision).
- Arellano (residential subdivision).
- Vaughn (residential subdivision).
- Heald (residential subdivision).
- Radio Antenna (cell tower).
- McClintock (residential subdivision).
- Nextel Cell Tower (cell tower).
- Barrett Wireless (cell tower).
- Pijnenburg (residential subdivision).
- Campo (La Posta) Border Patrol Station (U.S. Border Patrol).
- Verizon Wireless Cell Tower (cell tower).
- Buckman Springs Cell Tower (cell tower).
- SDG&E Mountain Empire Operator Training Facility (commercial).
- Buckman Springs Road Bridge (public facilities).
- Tibbot (residential subdivision).
- Verizon Cell Tower (cell tower).
- Calle Nada Cell Site.
- National Quarries (wind testing site).

It is reasonably anticipated that cumulative projects within the Pine Valley area of the Campo-Cottonwood SSA will continue to be comprised of rural residential land uses and projects maintained by the USDA Forest Service on Cleveland National Forest lands. As discussed in Section 4.19.9.2 above, for the purposes of this cumulative analysis, projects within the Pine Valley portion of the Campo-Cottonwood SSA would be the only ones with the potential to result in or combine with the proposed OWEF and result in impacts to groundwater supply or availability. As a result of the reasonably foreseeable cumulative conditions identified above only, the Volli residential subdivision and the La Posta Mountain Warfare Training Facility are relevant to the cumulative impacts analysis with the Campo-Cottonwood SSA. On Figure 4.1-1a, these projects are represented by the numbers 24, and 48, respectively.

4.19.9.4 Construction

Construction of the proposed OWEF would have the potential to result in cumulative impacts within the Ocotillo-Coyote Wells SSA and the Campo-Cottonwood SSA, where the proposed OWEF site and construction water source are respectively located. Impacts associated with construction activities would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The potential for water resources impacts of the proposed OWEF construction to combine with the effects of other projects within the geographic and temporal scope of this cumulative analysis is described below.

Groundwater Supply and Recharge

Potential water sources for the proposed OWEF are described in Section 3.20, and include the following: Pine Valley groundwater; City of Brawley (treated municipal water); Seeley County Water District (treated municipal water); Vulcan Materials Dixieland Mine (groundwater supply well); and the IID

(West-Side Canal water). As described in Section 4.19.3, with the exception of the Pine Valley groundwater source, existing studies and/or plans have demonstrated the availability of water supply from these potential sources to meet water requirements of the proposed OWEF; therefore, the Pine Valley groundwater source is addressed in detail in this analysis.

Cumulative impacts to groundwater supply and recharge during construction of the proposed OWEF or an alternative would occur if other projects drawing groundwater from Pine Valley area resources within the Campo-Cottonwood SSA would contribute to long-term overdraft conditions while the proposed OWEF or an alternative is pumping groundwater for construction requirements, and/or if other projects within the Campo-Cottonwood SSA or the Ocotillo-Coyote Wells SSA introduce substantial new areas of impervious surfaces such that groundwater recharge rates and/or patterns are substantially altered. As described above, construction of the proposed OWEF or an alternative would include implementation of BMPs and mitigation measures identified in Section 4.19.10. Mitigation Measure Water-2 (*Develop a Water Supply Contingency Plan for construction*) and Mitigation Measure Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*) require actions to ensure that construction of the proposed OWEF or an alternative would not result in long-term overdraft conditions associated with construction water requirements, thereby ensuring that the project would not contribute to the cumulative scenario such that cumulative impacts associated with groundwater supply and recharge would occur.

Based on the analysis of Pine Valley groundwater resources provided in Section 3.20, it is reasonable to assume that the Pine Valley area of the Campo-Cottonwood SSA is not currently affected by long-term overdraft conditions. There is potential for the proposed OWEF or an alternative to result in temporary overdraft or drawdown, but such effects would be temporary and would cease in response to the implementation of requirements specified in Mitigation Measure Water-3. With implementation of BMPs and mitigation measures identified in Section 4.19.10 and referenced throughout the analysis provided in this section, the project would not contribute to the cumulative scenario with respect to long-term overdraft and/or drawdown effects. If other project(s) within the geographic and temporal scope of analysis pump Pine Valley area groundwater at the same time as the Proposed Action or an alternative, and such pumping results in overdraft conditions (temporary or long-term), such effects would be detected by the groundwater monitoring and reporting activities required per Mitigation Measure Water-3 and groundwater pumping associated with the proposed OWEF would be subsequently ceased until the groundwater resource recovers, which is anticipated to occur in response to precipitation events, per the nature of fractured rock storage and overdraft/drawdown conditions. Therefore, the proposed OWEF or an alternative would not contribute to cumulative impacts associated with groundwater supply and recharge.

Surface Water and Drainage Patterns

The proposed OWEF site is approximately 12,436 acres, and implementation of the project would result in permanent disturbance to 155.5 acres, or approximately 1.4 percent of the overall site (see Table 2.2, Acres of Disturbance for Proposed Action). With implementation of the BMPs and mitigation measures presented in Section 4.19.10, construction of the proposed OWEF or an alternative would not result in substantial impacts to surface water and drainage patterns such that erosion, siltation, or flooding would occur on or off site. The Sunrise Powerlink project would cross through a portion of the proposed OWEF site, located within an existing utility corridor. WTGs would not be located within this corridor, although access roads within the corridor may also be utilized for access throughout the proposed OWEF site.

Potential impacts to surface water and drainage patterns associated with the Sunrise Powerlink project would be minimized through implementation of mitigation measures identified in the EIS/EIR prepared for that project. At the time of preparation of this Final EIS/EIR, construction of the Sunrise Powerlink project is already under way in the vicinity of the proposed OWEF project; therefore, construction of these two projects would not occur at the same time. Additionally, both projects would minimize potential impacts to surface water and drainage patterns through implementation of mitigation measures and compliance with existing laws and regulations, such as the use of a project-specific SWPPP for compliance with the Clean Water Act. Other projects that are also identified in the cumulative scenario (see Table 4.1-1) would result in alterations to surface water and drainage patterns in similar ways as the proposed OWEF; however, such effects are anticipated to be site-specific and would not occur on the same area as the proposed OWEF's impacts (including impacts associated with alternatives).

Stormwater Drainage Systems

The proposed OWEF and alternatives would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and would therefore not have the potential to result in cumulative impacts associated with existing or planned stormwater drainage systems. Due to the use and storage of harmful or potentially hazardous materials during construction activities, there is potential for construction of the proposed OWEF or an alternative to contribute sources of polluted runoff, such as if an accidental leak or release of harmful materials were to occur during a storm event. As mentioned, the Sunrise Powerlink project passes through the proposed OWEF site; however, construction of the Sunrise Powerlink project is currently ongoing and would not occur at the same time as the proposed OWEF. In addition, the Sunrise Powerlink project does not include implementation of a stormwater drainage system in the proposed OWEF area. Construction of the Sunrise Powerlink project is anticipated to have similar potential as the proposed OWEF to result in an accidental spill or leak of harmful materials that could have the potential to result in polluted runoff, but because construction of this project would not occur at the same time as construction of the proposed OWEF, there is no potential for a cumulative impact associated with polluted runoff to occur. In addition, this potential impact of the proposed OWEF would be site-specific and would be minimized or avoided by actions listed in Section 4.19.10, and would therefore not have the potential to combine with impacts of other projects in the cumulative scenario, as related to the contribution of polluted runoff.

Flood Hazard Areas

Infrastructure constructed under the proposed OWEF or an alternative would be designed and engineered to withstand potential flooding and erosion hazards and, with implementation of BMPs and mitigation measures identified in Section 4.19.10, effects associated with impeding or redirecting flood flows would be minimized and/or avoided. It is anticipated that other projects in the cumulative scenario would also place infrastructure within and/or adjacent to FEMA-designated Flood Hazard Areas. The Sunrise Powerlink project, discussed above, would pass through the proposed OWEF site and place permanent transmission line infrastructure in this area; this infrastructure could result in site-specific flood diversions in the case of a major (100-year) storm event, but such diversions would be isolated to the location of permanent project features (transmission poles), and would not be in close enough proximity to the proposed OWEF WTG towers such that the flow diversions at individual tower sites could combine to result in cumulative effects associated with flood hazards. In addition, the minimization and/or avoidance of potential Flood Hazard Area impacts that would occur through implementation of the BMPs and mitigation measures identified in Section 4.19.10, would ensure that the project's contribution to the cumulative scenario would be less than significant, and this potential impact of the proposed OWEF or an alternative would not combine with similar effects of other projects in the cumulative scenario

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of erosion and sedimentation, and/or through the accidental release of hazardous materials, particularly if a storm event occurs during construction activities. Other projects in the cumulative scenario would also have the potential to result in water quality impacts associated with erosion and sedimentation and/or the release of hazardous materials. This impact of the proposed OWEF or an alternative would be minimized and/or avoided through implementation of the BMPs and mitigation measures identified in Section 4.19.10 (as described in preceding sections), and would therefore be site-specific in nature. As described in Sections 4.19.9.2 and 4.19.2.3, and noted in Tables 4.1-1 and 4.1-2, other projects in the cumulative scenario are not adjacent to the proposed OWEF site and would not be under construction at the same time as the proposed OWEF or an alternative. Therefore, this potential impact of the proposed OWEF or an alternative would not have potential to combine with similar effects of other projects in the cumulative scenario.

Mudflow Hazards

Infrastructure that would be installed during construction of the proposed OWEF or an alternative would be designed and engineered to avoid impacts associated with the potential inundation by mudflow, where it is determined based on geotechnical studies that mudflow hazards are present. Although other projects in the cumulative scenario may place infrastructure in areas subject to mudflow hazards, due to the size of the proposed OWEF site and the minimization of this potential impact through implementation of BMPs and mitigation measures listed in Section 4.19.10, this potential impacts of the project or an alternative would not have potential to combine with similar effects of other projects in the cumulative scenario and potential cumulative effects are not anticipated to occur.

4.19.9.5 Operation and Maintenance

Cumulative impacts associated with operation and maintenance of the proposed OWEF or an alternative are discussed in this section. In order to be conservative in this assessment of cumulative impacts, it is assumed that the operation and maintenance water supply for the proposed OWEF or an alternative would be obtained from the Pine Valley groundwater source; as described above, the other potential water sources for the project are not considered to have potential to result in cumulative effects. As such, approximately 0.19 afy would be pumped from the Pine Valley groundwater source and transported to the project site via truck, where it would be stored in a tank at the O&M facility for use as needed.

Groundwater Supply and Recharge

As discussed in Sections 4.19.3 through 4.19.5, the operational water requirement of the proposed OWEF or an alternative would be approximately 0.19 afy, which is minimal compared to construction water requirements. This quantity is also well within the amount of water that has been historically exported from the proposed Pine Valley groundwater source (28 afy). The groundwater monitoring and reporting requirements specified in Mitigation Measure Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*), presented below in Section 4.19.10, ensure that the Pine Valley groundwater source would be closely evaluated during construction of the project, when water use would be substantially greater than during operation of the project, and ensure that groundwater usage occurs in close coordination with applicable agencies to ensure that adverse impacts do not occur. During operation of the project, coordination with applicable agencies (including the County of San Diego, for the Pine Valley groundwater source) would continue to occur, and would ensure that the project's operational usage of 0.19 afy would not result in adverse effects associated with groundwater supply and recharge. As discussed above in Section 4.19.9.4, construction of the proposed OWEF or an alternative would not have potential to result in cumulative impacts associated with groundwater supply and recharge. Therefore, the project or an alternative is not anticipated to have the potential to combine with similar impacts of other projects relevant to groundwater supply and recharge such that cumulative effects would occur. The operation and maintenance of the proposed OWEF or an alternative also would not result in cumulative effects associated with groundwater supply and recharge.

Surface Water and Drainage Patterns

Operation and maintenance of the proposed OWEF or an alternative would not introduce new infrastructure or alter existing surface water and drainage patterns beyond what is completed during the construction period. As previously noted, the Sunrise Powerlink project would pass through the OWEF site; however, similar to the proposed OWEF, operation and maintenance of the Sunrise Powerlink project would not introduce new infrastructure beyond what is implemented during the construction period. As discussed in the characterization of construction-related impacts, the presence of transmission towers and WTG towers may result in site-specific drainage pattern alterations, but such effects would be limited to the specific location of each tower. Due to the size of the overall project site and the site-specific nature of potential drainage pattern alterations, there would not be potential for similar effects of other project to combine with these potential effects of the proposed OWEF or an alternative such that cumulative impacts would occur. No cumulative impacts associated with surface water or drainage pattern alterations that could result in erosion, siltation, or flooding on or off site would occur.

Stormwater Drainage Systems

Operation and maintenance of the proposed OWEF or an alternative would not introduce any new stormwater drainage system(s) and would not create or contribute runoff water which could exceed the capacity of existing or planned stormwater drainage systems; therefore, no cumulative impacts associated with the capacity of existing or planned stormwater drainage systems would occur. Operation and maintenance of the proposed OWEF or an alternative would have the potential to create or contribute to polluted stormwater runoff, if an accidental spill or leak of hazardous materials such as vehicle fluids were to occur, particularly during a storm event; however, BMPs and mitigation measures listed in Section 4.19.10 would ensure that such potential effects would be minimized or avoided, and would remain site-specific. Considering the size of the proposed OWEF site and the site-specific nature of this potential impact, cumulative effects are not anticipated to occur.

Flood Hazard Areas

Operation and maintenance activities would not introduce new infrastructure or activities with the potential to impede or redirect flood flows such that new impacts would occur; therefore, no cumulative impacts associated with Flood Hazard Areas would occur.

Water Quality

Operation and maintenance of the proposed OWEF or an alternative would not introduce substantial new potential for water quality impacts to occur; due to the size of the proposed OWEF site, the site-specific nature of this potential impact, and the minimization and/or avoidance of potential water quality impacts that would occur through implementation of the BMPs and mitigation measures identified in Section 4.19.10, this potential impact of the proposed OWEF or an alternative is not anticipated to combine with similar effects of other projects in the cumulative scenario

Mudflow Hazards

Operations and maintenance of the proposed OWEF would not introduce any infrastructure or activities that would result in new mudflow hazards; no cumulative effects would occur.

4.19.9.6 Decommissioning

Cumulative impacts associated with decommissioning of the proposed OWEF or an alternative are discussed in this section. Water supply requirements associated with decommissioning of the proposed OWEF or an alternative are anticipated to be approximately 50 percent of the project's construction water requirements, or not more than 25 acre-feet, and it is reasonably assumed that the same water source used during construction would also be used to for decommissioning. Potential water sources that may be used to meet the project's water supply requirements are presented in Section 3.20.1. Local groundwater resources within the Ocotillo-Coyote Wells SSA would not be used to meet decommissioning water requirements.

As described in Section 4.19.3.1, decommissioning of the proposed OWEF or an alternative would include the removal and disposal of turbine towers, above-ground electrical tower components, and substation components, as well as the removal of all below-ground infrastructure to three feet below the ground surface. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of hydrology and water resources from potentially adverse impacts.

Groundwater Supply and Recharge

As described (Section 2.1.3.4 of this EIS/EIR and Section 2.1.3.4 of the Plan of Development for the proposed OWEF), decommissioning activities are anticipated to require not more than 25 acre-feet of water, or approximately 50 percent of the project's construction water requirement. Decommisioning water would be obtained from the same source(s) as construction and operational water; as previously discussed, although several potential water sources have been identified for the project, in order to be conservative in this characterization of potential impacts it is assumed that the Pine Valley groundwater source would be used to been all water supply requirements of the project, including during the decommissioning phase. One of the potential water sources is the Vulan Materials Dixieland Mine groundwater supply well, which is located along the eastern edge of the Coyote Wells Valley Groundwater Basin; however, as previously described, any use of groundwater from this source would occur within the constraints of an existing CUP and would not introduce new uses of groundwater resources from the Coyote Wells Valley Groundwater Basin. Decommissioning of the project would not use water from the Ocotillo-Coyote Wells SSA and would have no effect on groundwater overdraft or drawdown conditions in the Ocotillo-Coyote Wells SSA. BMPs and mitigation measures required under the proposed OWEF and alternatives would ensure that overdraft conditions are not present and would not occur as a result of the Proposed Action, and would avoid potential significant impacts associated with groundwater supply and recharge.

As described in Section 4.19.9.4, if other project(s) within the geographic and temporal scope of analysis pump Pine Valley area groundwater at the same time as the Proposed Action or an alternative, and such pumping results in overdraft conditions (temporary or long-term), such effects would be detected by the groundwater monitoring and reporting activities required per Mitigation Measure Water-3 and groundwater pumping associated with the proposed OWEF would be subsequently ceased until the groundwater resource recovers, which is anticipated to occur in response to precipitation events, per the nature of fractured rock storage and overdraft/drawdown conditions. Therefore, as with potential cumulative effects associated with construction, decommissioning of the proposed OWEF or an alternative would not result in impacts to groundwater supply and recharge that would contribute to the cumulative scenario such that cumulative impacts associated with groundwater supply and recharge would occur.

In addition, restoration of the proposed OWEF site would include returning the area as close as reasonably possible to pre-construction conditions suitable for current adjacent land; therefore, potential effects of decommissioning activities to groundwater recharge are anticipated to be beneficial, and adverse cumulative effects associated with recharge would not occur. A decommissioning plan would be implemented prior to decommissioning activities, and would include BMPs consistent with the BLM Wind Energy Program EIS/ROD and similar to the BMPs implemented with construction of the proposed OWEF (presented below in Section 4.19.10); as such, dewatering BMPs would be implemented as needed, and significant adverse cumulative effects to groundwater supply related to dewatering activities would not occur.

Flood Hazard Areas

Decommissioning of the proposed OWEF or an alternative would remove infrastructure from the project site, and would remove potential impacts introduced during construction of the proposed OWEF associated with placing structures within a Flood Hazard Area such that flood flows could be impeded or redirected; no cumulative impacts related to Flood Hazard Areas would occur.

Water Quality

Decommissioning of the proposed OWEF or an alternative would involve the handling and disposal of hazardous materials including fluids such as lubricating oils, hydraulic fluids, and coolants drained from the turbine components, and would introduce the potential for an accidental release and associated water quality degradation to occur. Cumulative impacts could occur if the proposed OWEF (or an alternative) and another project within the Ocotillo-Coyote Wells SSA results in water quality degradation affecting the same water resource. Due to the size of the proposed OWEF site, and the minimization and/or avoidance of potential water quality impacts that would occur through implementation of the BMPs and mitigation measures identified in Section 4.19.10, the proposed OWEF or an alternative would not contribute to cumulative effects associated with water quality.

Stormwater Drainage Systems

Decommissioning of the proposed OWEF would not introduce a new stormwater drainage system or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and would not provide substantial additional sources of polluted runoff; no cumulative effects associated with stormwater drainage systems would occur.

Mudflow Hazards

Decommissioning of the proposed OWEF would decrease potential adverse effects associated with mudflow hazards; no adverse cumulative effects would occur.

4.19.9.7 CEQA Significance Determinations

Construction of the proposed OWEF or an alternative would result in no impacts associated with the violation of water quality standards or waste discharge requirements, and no cumulative impacts would occur under CEQA Significance Criteria WR-1 or WR-6; therefore, significance determinations are not provided below for these indicators.

- **WR-2.** With the implementation of BMPs and mitigation measures required under the proposed OWEF and alternatives, the project's contribution to potential cumulative impacts associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant.
- **WR-3** and **WR-4.** Construction of the proposed OWEF would include earth-disturbing activities and the installation of new infrastructure that would introduce the potential to substantially alter existing drainage patterns of the site, such that erosion, siltation, and/or flooding on or off site could occur. However, with implementation of BMPs and mitigation measures required under the proposed OWEF and alternatives, the project's contribution to cumulative impacts would be less than significant.
- **WR-5.** The proposed OWEF does not include installation of new stormwater drainage systems, and would not affect existing stormwater drainage systems. BMPs and mitigation measures that would be implemented with the proposed OWEF and alternatives would minimize and/or avoid potential impacts associated with polluted runoff. The project's contribution to potential cumulative impacts would be less than significant.
- **WR-8** and **WR-10.** During construction of the proposed OWEF, new infrastructure would be installed within and adjacent to designated Flood Hazard Areas, and in the vicinity of areas subject to mudflow hazards. BMPs and mitigation measures that would be implemented under the proposed OWEF and alternatives would ensure that the project's contribution to potential cumulative impacts would be less than significant.

Operation and maintenance of the proposed OWEF or an alternative would result in no impacts associated with the violation of water quality standards or waste discharge requirements and, therefore, the project would not contribute to cumulative impacts related to significance criteria WR-1, WR-2, WR-3, WR-4, WR-5, WR-6, WR-8, or WR-10; therefore, significance determinations are not provided for these indicators.

Decommissioning of the proposed OWEF or an alternative would result in no impacts associated with the violation of water quality standards or waste discharge requirements and, therefore, the project would not contribute to cumulative impacts related to significance criteria WR-1, WR-3, WR-4, WR-6, WR-8, or WR-10; therefore, significance determinations are not provided below for these indicators.

- **WR-2.** With the implementation of BMPs and mitigation measures required under the proposed OWEF and alternatives, the project's contribution to potential cumulative impacts associated with the depletion of groundwater resources and interference with groundwater recharge would be less than significant.
- **WR-5.** Decommissioning of the proposed OWEF or an alternative could generate polluted runoff, but such impacts would be minimized or avoided through implementation of BMPs and mitigation measures. The project's contribution to potential cumulative impacts would be less than significant.

4.19.10 Mitigation Measures

The proposed OWEF would include implementation of recommended BMPs from BLM's Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States (BLM, 2005). The BLM BMPs are presented below.

BLM Best Management Practices

- The size of cleared and disturbed lands shall be minimized as much as possible. Existing roads and borrow pits shall be used as much as possible.
- Topsoil removed during construction shall be salvaged and reapplied during reclamation. Disturbed soils shall be reclaimed as quickly as possible or protective covers shall be applied.
- Operators shall identify unstable slopes and local factors that can induce slope instability (such as groundwater conditions, precipitation, earthquake activities, slope angles, and dip angles of geologic strata). Operators also shall avoid creating excessive slopes during excavation and blasting operations. Special construction techniques shall be used where applicable in areas of steep slopes, erodible soil, and stream channel/wash crossings.
- Erosion controls that comply with county, state, and federal standards shall be applied. Practices such as jute netting, silt fences, and check dams shall be applied near disturbed areas.
- Operators shall gain a clear understanding of the local hydrogeology. Areas of groundwater discharge and recharge and their potential relationships with surface water bodies shall be identified.
- Operators shall avoid creating hydrologic conduits between two aquifers during foundation excavation and other activities.
- Proposed construction near aquifer recharge areas shall be closely monitored to reduce the potential for contamination of said aquifer. This may require a study to determine localized aquifer recharge areas.
- Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavated material shall be disposed of only in approved areas to control soil erosion and to minimize leaching of hazardous constituents.
- Existing drainage systems shall not be altered, especially in sensitive areas such as erodible soils or steep slopes. When constructing stream or wash crossings, culverts or water conveyances for temporary and permanent roads shall be designed to comply with county standards, or if there are no

county standards, to accommodate the runoff of a 10-year storm. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly.

- On-site surface runoff control features shall be designed to minimize the potential for increased localized soil erosion. Drainage ditches shall be constructed where necessary but held to a minimum. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, drainage ditches, and culverts shall be cleaned and maintained regularly.
- Pesticide use shall be limited to nonpersistent, immobile pesticides and shall only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

Project-Specific Mitigation Measures

In addition to the BLM BMPs listed above, project-specific mitigation measures have been developed to reduce and/or avoid potential water resources impacts associated with construction of the proposed OWEF or an alternative. These project-specific mitigation measures are presented below.

Water-1 **Demonstrate compliance with water quality permits.** Prior to construction, the Applicant shall submit satisfactory evidence to the BLM and the Imperial County Department of Planning and Building, as applicable, that all of the agencies listed below have been contacted and whether or not each agency requires a permit associated with the OWEF. Permits may include, but are not limited to, a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG), a Clean Water Act Section 404 permit from the ACOE, a Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction activities, including a Stormwater Pollution Prevention Plan (SWPPP) with Best Management Practices (BMPs) for stormwater management, a Clean Water Act Section 401 certification from the applicable Regional Water Quality Control Board (RWQCB) (Colorado River Basin RWQCB for activities at the proposed OWEF site, and/or San Diego Basin RWQCB for activities at the proposed water source in Pine Valley).

Where a permit is required, the Applicant shall provide a copy of all the conditions required by that agency to BLM, for actions on BLM lands, and to the Imperial County Department of Planning and Building, for actions on County lands. The BLM and the County, as applicable, shall review these conditions for consistency with proposed plans. During construction, the Environmental Monitor shall be aware of these other agency conditions and if non-compliance is observed, shall contact the affected agency. For post-construction measures the Environmental Monitor shall notify the affected agency should non-compliance be observed. The Applicant shall maintain and make available on site at all times an approved copy of all required permits.

Water-2 **Develop a Water Supply Contingency Plan for construction.** Prior to construction, Applicant shall conduct a groundwater investigation for any groundwater basin(s) potentially affected by construction, operation, and/or decommissioning of the project to determine whether the identified groundwater resource(s) is in overdraft conditions; such investigation may include review of historic groundwater well data, groundwater monitoring, hydrologic modeling, and/or interviews with private well owners. The Applicant shall coordinate groundwater investigation efforts with the applicable RWQCB. No new uses of groundwater resources from overdrafted basins shall be introduced to meet project needs.

If groundwater is to be used during project construction, at least two supply wells shall be identified for project use, a primary supply well and a secondary supply well. The Water Supply Contingency Plan shall identify the well sites, proximity to other active wells, estimated total depth, well screen depth, diameter, estimated yield and water quality, and time required to have the wells drilled, constructed, developed and fully operational (if the wells are to be drilled specifically for the project, as opposed to use of existing wells). If the daily yields of the primary supply well are inadequate or become inadequate to meet the project requirements, the secondary supply well shall be used in order to avoid potential drawdown impacts at wells near the primary. Use of a secondary supply well would not alter the quantity of groundwater pumped for project purposes; the purpose of the secondary supply well would be to avoid potential impacts associated with over-pumping the primary supply well.

The Water Supply Contingency Plan shall specify when the second supply well shall be used, what conditions would trigger necessary use of the second supply well, the person responsible for determining when to utilize the second supply well, and how such use shall be reported. The Environmental Monitor shall verify that the secondary supply well is installed and is capable of producing daily yields sufficient to supplement or replace the primary supply well in meeting construction water demand, as needed.

Water-3 **Prepare Groundwater Monitoring and Reporting Plan.** The Applicant shall develop and implement a Groundwater Monitoring and Reporting Plan prior to the onset of construction of the OWEF. In the preparation and implementation of this plan, the Applicant shall coordinate with the BLM for actions on BLM lands within the Ocotillo-Coyote Wells Sole Source Aquifer (SSA), and with Imperial County for actions on County lands within the Ocotillo-Coyote Wells SSA. In addition, the Applicant shall coordinate with San Diego County for activities within the Campo-Cottonwood SSA. The Groundwater Monitoring and Reporting Plan shall be prepared by a qualified hydrogeologist and submitted by the Applicant to the BLM for approval, and to the Counties of Imperial and San Diego for review and comment.

The Groundwater Monitoring and Reporting Plan shall provide detailed methodology for monitoring background and site groundwater levels, water quality, and flow. Monitoring shall be performed during pre-construction, construction, and project operation with the intent to establish pre-construction and project-related groundwater level and water quality trends that can be quantitatively compared against observed and simulated trends near the project pumping wells and near potentially impacted existing private wells. The monitoring wells shall include locations up-gradient, lateral, and down-gradient of all project supply wells and a minimum of three offsite down-gradient wells. Water quality monitoring shall include annual sampling and testing for Total Dissolved Solids (TDS), which include minerals, salts, and metals dissolved in water. Water quality samples shall be drawn from project supply wells, one up-gradient well, and a minimum of two down-gradient offsite wells.

During construction, quarterly water level monitoring data reports shall be submitted to the BLM for review and approval. Based on the results of the quarterly trend analyses, the Applicant shall determine if the project pumping has resulted in water level decline of five feet or more below the baseline trend at nearby private wells. If drawdown of five feet or more occurs at off-site wells, the Applicant shall immediately reduce groundwater pumping until water levels stabilize or recover, sustaining drawdown of less than five feet. Alternatively, the Applicant shall provide compensation to the well owner, including reimbursement of increased energy costs, or deepening the well or pump setting.

The Plan shall include a schedule for submittal of quarterly monitoring data reports by the Applicant to the BLM. The BLM shall review these quarterly reports with consideration to the following criteria:

- Where water level monitoring has indicated drawdown of five feet or more, the Applicant has immediately reduced groundwater pumping until water levels recover and stabilize or the Applicant has provided compensation to the well owner;
- Sustained drawdown of five feet or more has not occured at off-site wells; and
- Substantial groundwater quality degradation has not occurred in water drawn from the project's supply well(s) or off-site wells (such as increased TDS concentrations that may result from over-pumping).

Per the criteria listed above, the BLM shall determine whether additional mitigation is necessary to reduce adverse impacts to groundwater resources and groundwater wells surrounding the project site. Such additional mitigation efforts, as determined by the BLM to be appropriate, may include but are not limited to the following: reduced rate of groundwater pumping; use of an alternative water source; water conservation activities.

Water-4 **Install pervious and/or high-roughness groundcover where applicable.** Prior to the onset of construction of the OWEF, the Applicant shall submit a drainage design and hydrologic and hydraulic analysis to the BLM for review and approval, and to the Imperial County Department of Planning and Building for review and comment. In the design plans, groundcover for the new substation shall be comprised of a pervious and/or high-roughness material (for example, gravel) to the maximum extent feasible, in order to ensure maximum percolation of rainfall after construction. Detention/retention basins shall be installed to reduce local increases in runoff, particularly on frequent runoff events (up to 10-year frequency). Downstream drainage discharge points shall be provided with erosion protection and designed such that flow hydraulics exiting the site mimic the natural condition as much as possible.

Water-5 **Design onsite drainage improvements to maximize groundwater recharge.** Prior to onset of construction of the OWEF, the Applicant shall design on-site drainage improvements (and include on all applicable construction plans) to include the following components to maximize groundwater basin recharge: drainage from impervious surfaces (e.g., roads, driveways, buildings) shall be directed to a common drainage basin; the project shall design as few basins as possible for the entire development; and where feasible, mass grading and contouring shall be done in a way to direct surface runoff towards the above-referenced basins (and/or closed depressions).

Water-6 **Construction site dewatering management.** If groundwater is unexpectedly encountered during construction, operation, or decommissioning of the OWEF, dewatering activities shall be performed in compliance with the California Stormwater Quality Association (CASQA) Handbook for Construction or other similar guidelines, as approved by the BLM, for actions on BLM lands, and/or by Imperial County, for actions on County lands. The project Applicant shall notify the BLM and applicable County (Imperial and/or Sand Diego) and RWQCB (Colorado River Basin RWQCB for activities at the proposed OWEF site, and/or San Diego Basin RWQCB for activities at the proposed water source in Pine Valley) at the onset of dewatering and submit written description of all executed dewatering activities, including steps taken to return encountered groundwater to the subsurface, upon the completion of dewatering activities at the affected site(s). The Environmental Monitor shall periodically check grading activities for groundwater exposure. Should groundwater be encountered, compliance with dewatering efforts shall be verified by the recognized local authority (RWQCB or Department of Planning and Building).

Water-7 **Develop master Drought Water Management and Water Conservation Education Programs.** Prior to the onset of construction of the OWEF, a master Drought Water Management Program shall be prepared by the Applicant and submitted to the BLM for approval. The Drought Water Management Program shall provide guidelines on how all future water use will be managed during "severe" drought year(s).

During construction and operation, these measures would go into effect during periods of "severe" drought. Once it is determined that a "severe" drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the BLM that the "severe" drought condition no longer exists. This plan shall include, but is not limited to the following measures:

- The definition of a "severe" drought year (as defined by the National Oceanic and Atmospheric Administration's (NOAA) Palmer Drought Severity method or other similarly recognized methodology);
- Identification of general measures available to reduce water usage for future development (to be refined as needed for each use approved);
- Identification of specific measures to be applied for landscape watering;
- Determination of appropriate early triggers to determine when "severe" drought conditions exist and process for initiating additional water conservation measures for [tract] and future development.

In congruence with the Drought Water Management Program and prior to the onset of construction of the OWEF, the Applicant shall develop and submit to the BLM for approval, a master Water Conservation Education Program for all future operators and employees for use during drought periods. Such a program shall be developed by an appropriate expert for each on-site activity using water. Once the program is developed, the Applicant shall also include the means by which this information will be disseminated to any future operators of the project. The Drought Water Management Program and Water Conservation Education Program shall be implemented throughout the construction, operation, and decommissioning phases of the OWEF.

For any year that a "severe drought" state has been recognized, the Applicant shall submit a letter to the BLM by November 1 of that year identifying what measures were implemented to conserve water and to provide water conservation education, as well as the effectiveness of such measures.

Water-8 **Flood and Erosion Structure Damage Protection.** Aboveground project features shall not be placed within waterway protection corridors (floodways) defined by city and county codes, and shall be located outside of known watercourses. Aboveground project features shall be designed and engineered to withstand potential flooding and erosion hazards. Although some project features may need to be placed within 100-year floodplain boundaries, or Flood Hazard Areas, they shall be designed per applicable floodplain development guidelines, including measures such as specially designed footings to withstand flooding associated with a 100-year flood event.

Water-9 Construction SWPPP Specifications. A Construction SWPPP shall be developed for the OWEF. Notices of Intent (NOIs) would be filed with the State Water Resources Control Board (SWRCB) and the applicable RWQCBs (Colorado River Basin RWQCB for activities at the OWEF site, and/or San Diego Basin RWQCB for activities at the proposed water source in Pine Valley). A Waste Discharge Identification Number (WDID) would be obtained prior to the issuance of construction permits. The SWPPP shall be stored at the construction site for reference by construction personnel and for inspection review. The SWPPP shall include BMPs that would be adhered to during construction in order to stabilize graded areas and waterways, and reduce erosion and sedimentation. Such BMPs may include but are not limited to those described below.

- Erosion minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions (for example, flagging) that would be installed before clearing and grading begins.
- Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities.
- During construction activities, measures would be in place to ensure that contaminants are not discharged from the construction sites.
- A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.
- Straw wattles (or comparably effective devices [as determined by the on-site Civil Engineer, in consultation with the Environmental Monitor]) shall be placed on the downslope sides of the proposed work which would direct flows into temporary sedimentation basins.
- The SWPPP shall include a Sedimentation and Erosion Control Plan to minimize the potential for project sediment to leave the OWEF site and result in downstream sedimentation.
- All erosion control materials shall be biodegradable and natural fiber.

All be BMPs required by the SWPPP shall be checked and maintained regularly and after all larger storm events. All remedial work shall be done immediately after discovery so sedimentation control devices remain in good working order during the entire construction phase. Proper implementation will be verified by the Environmental Monitor.

Water-10 Accidental spill control and environmental training. Prior to the onset of construction of the OWEF, the following specifications must be provided by the Applicant to the BLM, for actions on BLM lands, and to Imperial County, for actions on County lands: define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. The Applicant shall also prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. These specifications may be included in the project's SWPPP, or may be included as a separate plan.

Prior to and during construction, an environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures, and SWPPP measures, to all field personnel. A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations and maintenance, and decommissioning activities.

Storage of fuels and hazardous materials shall be prohibited within 200 feet of surface water features and private groundwater supply wells, and within 400 feet of community or municipal groundwater supply wells (if it is determined that such wells exist on or in close proximity to the project site).

During construction/ground disturbing activities and operation, all vehicles and equipment, including all hydraulic hoses, shall be maintained in good working order so that they are free of any and all leaks that could escape the vehicle or contact the ground, and to ensure that any leaks or spills during maintenance or storage can be easily and properly removed.

Compliance will be verified by the Environmental Monitor and the local SWPPP authority at the time of construction.

4.19.11 Residual Impacts After Mitigation

Following implementation of BMPs and mitigation measures provided in Section 4.19.10 and discussed throughout Sections 4.19.3 through 4.19.5 and Section 4.19.9, all adverse impacts to water resources resulting from construction, operation and maintenance, or decommissioning of the proposed OWEF or an alternative would be avoided or substantially reduced. Mitigation Measures Water-1 through Water-10 have been designed to address project-specific effects as related to water resources, and no adverse impacts to water resources would occur as a result of the implementation of these mitigation measures. As a result, the proposed OWEF would result in no adverse unavoidable impacts to water resources.

4.20 Wildland Fire Ecology

4.20.1 Methodology for Analysis

The California Department of Forestry and Fire Protection (CAL FIRE) maps and datasets on statewide Fire Hazard Severity Zones (FHSZ), aerial photographs, and site reconnaissance documenting vegetation conditions were all used to determine wildfire risk in the vicinity of the project site. Published literature on fire behavior and indirect impacts on natural resources was reviewed to assess potential indirect impacts.

4.20.2 CEQA Significance Criteria

The indicators listed below were used to determine if the proposed OWEF would result in significant impacts under CEQA to wildland fire ecology. These indicators are the same as the significance criteria for wildland fire listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. The Proposed Action would result in an adverse impact on wildland fire ecology if it would:

Fire-1 *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.*

4.20.3 Alternative 1: Proposed Action

The direct effects of wildland fires include the loss of life and property. The indirect effects on natural resources that can result from an increase in the frequency and/or severity of wildfires are described here, and are common to all alternatives. The potential direct and indirect impacts resulting from the construction, operation, maintenance and decommissioning of the Proposed Action (Alternative 1) are described in Section 4.20.3.1.

Environmental Effects of Fires

Although fire can benefit natural ecosystems that have evolved with occasional fire and that benefit from the stimulation of growth through the reproduction of plants and wildlife habitat, fire can also be detrimental to biological and other natural resources, such as air quality and water quality.

Biological Resources

Weedy species have been known to invade desert and semi-desert habitats in areas where fires have occurred infrequently because of scant fuels sources. Because vegetation communities can be converted following fire, these changes in dominant vegetation communities can drastically affect plant and animal habitat and can affect the prevalence of special-status species. When fires occur in these areas, vegetation can change (such as converting to non-native grasses) and become more susceptible to ignition. Animals within desert ecosystems are ill-suited to avoid fire and often struggle to use resources and prosper in post-fire communities (CPUC and BLM, 2008).

Air Quality

Carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons, and other constituent materials are all present in wildfire smoke. The specific composition of smoke depends largely on the fuel type (vegetation types contain different amounts of cellulose, oils, waxes, and starches, which when ignited produce different compounds). In addition, hazardous air pollutants and toxic air contaminants, such as benzene and formaldehyde, are also present in smoke. However, the principal pollutant of concern from wildfire smoke is particulate matter. In general, particulate matter from smoke is very small in size and can be inhaled into the deepest recesses of the lungs, presenting a serious health concern (Lipsett, 2008).

Large quantities of pollutants can be released by wildland fires over a relatively short period of time. Air quality during large fires can become severely hazardous and can remain impaired for several days after the fire is ignited.

Water Quality

Fire can affect water quality by increasing potential for erosion and sedimentation in areas where vegetation has been burned by fire. Water chemistry can also be altered through the introduction of pollutants and chemical constituents. Aquatic environments may also be impacted through the introduction of fire retardant chemicals used during firefighting activities.

Erosion and Sedimentation. Watersheds severely burned by wildfire are vulnerable to accelerated rates of soil erosion and can experience large amounts of post-fire sediment deposits. Increases in post-fire suspended sediments in streams can result from erosion and overland flow, channel scouring, and creep accumulations in stream channels after an event (USDA, 2005).

Water Chemistry. Ash deposits generated by a fire can affect the pH of water immediately after the event, potentially increasing to levels that violate water quality standards. In addition, increases in the pH of nearby soil can also cause increases in stream flow pH (USDA, 2005). Dissolved nitrogen levels can increase after fires as a result of accelerated mineralization and nitrification (dissolved nitrogen is commonly studied as an indicator of fire disturbance), but these levels do not typically exceed established water quality standards (USDA, 2005). Dissolved phosphorous, sulfur, chloride, and total dissolved solids levels can increase after a fire, but studies have shown that these increases typically do not result in violation of drinking water quality standards (USDA, 2005).

Fire Retardant. The use of fire retardants to protect communities, sensitive resources, or other assets has proven highly effective, but it can have a direct effect on aquatic environments. The use of ammonium-based retardants can affect water quality and, in some instances, they can be toxic to aquatic biota (USDA, 2005). Nitrogen-containing retardants can potentially affect drinking water quality, and retardants containing sodium ferrocyanide (YPS) can potentially be lethal for aquatic organisms (USDA, 2005).

4.20.3.1 Direct and Indirect Impacts

Construction

Temporary water storage tanks would be installed to support the project's water needs, including water for concrete mixing; however, no dedicated water tanks are proposed for fire suppression.

Construction activities involving the use of vehicles and heavy machinery, and personnel smoking at the project site could result in the ignition of a wildfire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers, explosives used during site preparation, and improper disposal of cigarettes could potentially ignite surrounding vegetation. Although the characteristics of the site present only a moderate fire hazard, during extreme weather conditions a grass fire originating at the site could spread up the slopes of the adjacent Jacumba Mountains out of control and pose a risk to life and property.

The probability of a wildfire to occur as a result of project construction would be moderate due to the moderately risky site conditions and climate, and the proposed high level of heavy equipment use. A wildfire that escapes control and spreads into the mountains could result in a high level of damage, and the risk[1] of fire as a result of project construction is therefore considered substantial.

If the introduction of invasive, non-native plants is not controlled during construction, over time the project site could become dominated with non-native plants that tend to increase the frequency and severity of wildfires.

The proposed noxious weed plan in combination with Mitigation Measure Veg-1d would minimize the potential for weed colonization and dominance on site by requiring implementation of a risk assessment of the invasive weed species currently known within the study area, procedures to control their spread on site, and procedures to help minimize the introduction of new weed species. Implementation of this mitigation measure would not completely eliminate the introduction of noxious weeds into the study area, but it would minimize their introduction and control their spread on the project site. In addition, Mitigation Measure Fire-1 would require development and implementation of a fire management plan, including minimum standards for fire-safe practices during construction, which would minimize the potential for a wildfire ignition to occur as a result of project-related construction practices activities and the presence of personnel on site. Because these mitigation measures would not disturb or disrupt the natural environment and would not threaten the health or safety of people, their implementation would not result in adverse impacts.

Operation and Maintenance

Operation of the project could result in wildfire ignition if the rotor blades were to spin out of control resulting in a fire in the nacelle. In addition, during operation, lightning strikes on WTGs could create power surges that could result in a fire.

Wind turbines can be the source of wildfire ignitions due to collection line failure, turbine malfunction or mechanical failure, and lightning- and bird-related incidents. When mechanical or electrical failures cause turbines to catch fire, they may burn for many hours due to the limited ability of fire suppression crews to effectively fight fires hundreds of feet above the ground. High-wind conditions are risky for both WTG malfunction and the spread of wildfire. Wind-blown flaming debris from a turbine fire can ignite vegetation in the surrounding area. In addition, pad-mounted transformers can explode and result in a wildfire ignition, although this is expected to be a rare occurrence. However, vegetation clearance requirements and project design features and project operations would reduce the potential for wildfire ignition and the potential for a wildfire to spread out of control. The project operator would be required to comply with vegetation clearance requirements around structures at the site, as described in Section 3.22.2 (Applicable Regulations, Plans, and Standards). In addition, as proposed, each WTG at the proposed project site would be equipped with a fire detection system. A lightning rod would be installed atop the nacelle at each WTG, lightning shielding would be installed on all blades, and shielding would be installed on other sensitive equipment as well, which would reduce the risk of lightning-induced wildfire at the site. Ion-based smoke detectors would be placed in all important electrical panels and connected to individual digital inputs on the wind turbine control system. Both tower and complete nacelle covering are made of steel and are fully enclosed and as such limit a possible fire. In addition, temporary and permanent roads across the proposed project site would break the continuity of fuels at the site, which would slow or stop the progression of potential wildfires originating at the site.

---

[1] The level of "risk" of an event is a combination of the probability of an event's occurrence and the magnitude of the damages of the event's occurrence. Calculations of the risk of low-probability, high-damage events yield a moderate risk. However, history has shown that society is particularly risk-averse to low-probability, high-damage events.

The height of the WTGs could interfere with aerial firefighting operations by obstructing low-level flight paths within the site boundaries. The presence of the existing Southwest Powerlink 500-kV transmission line causes aerial firefighters to avoid flying in the immediate vicinity of the project site under existing conditions. Also, aerial firefighting would not be obstructed around the perimeter of the site, ensuring that fire containment would be feasible regardless of the existence of WTGs on the landscape. Obstruction of aerial firefighting from the presence of WTGs would be minimal.

The probability of a wildfire to occur as a result of project operations would be low due to the site conditions and proposed activities; however, a wildfire that escapes control and spreads into the mountains could result in a high level of damage to biological resources and other natural resources, such as air quality and water quality as discussed above, in addition to the potential for loss of life and destruction of property.

The proposed noxious weed plan (see Section 2.1.3.5, Design Features and Best Management Practices) in combination with Mitigation Measure Veg-1d presented in Section 4.17.10, would minimize the potential for weed colonization and dominance on site by requiring implementation of a risk assessment of the invasive weed species currently known within the study area, procedures to control their spread on site, and procedures to help minimize the introduction of new weed species. Because these mitigation measures would not disturb or disrupt the natural environment and would not threaten the health or safety of people, their implementation would not result in adverse impacts.

Decommissioning

The risk of wildfire ignition during decommissioning would be similar to that during construction, through the use of equipment and personnel on site. Mitigation Measure Fire-1 includes a provision for fire-safe practices during decommissioning activities.

4.20.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the project (Construction, Operation and Maintenance, Decommissioning) are presented below based on the CEQA Significance Criterion presented in Section 4.20.2.

- **Fire-1.** Project construction and decommissioning could expose people to a substantial risk of loss, injury, or death involving wildland fires by the use of heavy equipment on site or personnel smoking.

In addition, long-term operation of WTGs would expose people to a substantial risk of loss, injury, or death involving wildland fires if a WTG-related ignition were to occur during severe weather conditions. This impact is considered significant. Implementation of the project could cause a substantial increase in the frequency and severity of wildfires by introducing non-native plants and by causing anthropogenic wildfire ignitions during construction, operation, and decommissioning, which could expose people or structures to loss, injury, or death. This impact is considered significant. However, with implementation of Mitigation Measures Fire-1 and Veg-1d, in addition to best management practices, would reduce the risk of wildfire ignition and minimize the introduction and spread of non-native plants such that the baseline level of wildfire frequency and severity is maintained, rendering this impact less than significant.

4.20.4 Alternative 2: 137 Wind Turbine Generators

4.20.4.1 Direct and Indirect Impacts

The direct effects of fires include loss of life and property. The indirect effects on natural resources that can result from the increase in the frequency and severity of wildfires are described in Section 4.20.3. Direct and indirect impacts resulting from construction, operation, and decommissioning of Alternative 2 are described in this section.

Construction

The wildfire-related construction impacts of Alternative 2 would be nearly identical to that of Alternative 1. Construction activities would be slightly less intense, but the risk of wildfire ignition and the increase in wildfire frequency from the introduction of non-native plants would be substantially the same. Mitigation Measures Fire-1 and Veg-1d would substantially reduce the risk of wildfire ignition and spread for the reasons set forth above.

Operation and Maintenance

The wildfire-related operational impacts of Alternative 2 would be nearly identical to that of Alternative 1. Maintenance activities would be slightly less intense and there would be fewer WTGs that could potentially start a fire, but the risk of wildfire ignition and the increase in wildfire frequency from the introduction of non-native plants would be substantially the same. Mitigation Measures Fire-1 and Veg-1d would substantially reduce the risk of wildfire ignition and spread for the reasons set forth above.

Decommissioning

The wildfire-related decommissioning impacts of Alternative 2 would be nearly identical to that of Alternative 1. Decommissioning activities would be slightly less intense as a result of fewer turbines, but the risk of wildfire ignition would be substantially the same. Mitigation Measure Fire-1 would reduce the risk of wildfire ignition and spread for the reasons set forth above.

4.20.4.2 CEQA Significance Determinations

The CEQA significance determinations for Alternative 2 are the same as for Alternative 1.

4.20.5 Alternative 3: 105 Wind Turbine Generators

4.20.5.1 Direct and Indirect Impacts

The direct effects of fires include loss of life and property. The indirect effects on natural resources that can result from the increase in the frequency and severity of wildfires are described in Section 4.20.3. Direct and indirect impacts resulting from construction, operation, and decommissioning of Alternative 3 are described in this section.

Construction

The wildfire-related construction impacts of Alternative 3 would be nearly identical to that of Alternatives 1 and 2. Construction activities would be slightly less intense, but the risk of wildfire ignition and the increase in wildfire frequency from the introduction of non-native plants would be substantially the same. Mitigation Measures Fire-1 and Veg-1d would substantially reduce the risk of wildfire ignition and spread for the reasons set forth above.

Operation and Maintenance

The wildfire-related operational impacts of Alternative 3 would be nearly identical to that of Alternatives 1 and 2. Maintenance activities would be slightly less intense and there would be fewer WTGs that could potentially start a fire, but the risk of wildfire ignition and the increase in wildfire frequency from the introduction of non-native plants would be substantially the same. Mitigation Measures Fire-1 and Veg-1d would substantially reduce the risk of wildfire ignition and spread for the reasons set forth above.

Decommissioning

The wildfire-related decommissioning impacts of Alternative 3 would be nearly identical to that of Alternatives 1 and 2. Decommissioning activities would be slightly less intense as a result of fewer turbines, but the risk of wildfire ignition would be substantially the same. Mitigation Measure Fire-1 would reduce the risk of wildfire ignition and spread for the reasons set forth above.

4.20.5.2 CEQA Significance Determinations

The CEQA significance determinations for Alternative 3 are the same as for Alternatives 1 and 2.

4.20.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.20.6.1 Direct and Indirect Impacts

Under Alternative 4, the OWEF would not be constructed and no impacts would occur from the Proposed Action. However, the land on which the project is proposed would become available to other uses that are consistent with the BLM's land use plan, including recreation, livestock grazing, and utility lines in designated corridors. These activities could potentially result in wildfire ignitions, but ignitions would be expected to occur at a lower rate than under the heavy construction and long-term operation of the Proposed Action. Impacts related to wildland fire ecology under Alternative 4 would not be substantial.

4.20.6.2 CEQA Significance Determinations

Alternative 4 would result in no wildland fire ecology impacts and, therefore, no CEQA significance determinations have been made.

4.20.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.20.7.1 Direct and Indirect Impacts

Under Alternative 4, the OWEF would not be constructed and no impacts would occur from the Proposed Action. However, the land on which the project is proposed would become available to other uses that are consistent with the BLM's land use plan, including recreation, livestock grazing, and utility lines in designated corridors, but excluding wind energy development. These other activities could potentially result in wildfire ignitions, but ignitions would be expected to occur at a lower rate than under the heavy construction and long-term operation of the Proposed Action. No impacts associated with the OWEF would occur.

4.20.7.2 CEQA Significance Determinations

Alternative 5 would result in no wildland fire ecology impacts related to the OWEF, and therefore no CEQA significance determinations can be made.

4.20.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.20.8.1 Direct and Indirect Impacts

Under Alternative 6, the OWEF would not be constructed and no impacts would occur from the Proposed Action. However, the land on which the project is proposed would become available to other wind energy facilities. These activities could potentially result in wildfire ignitions similar to Alternative 1. With implementation of the same mitigation measures identified for Alternative 1, impacts related to wildland fire ecology under Alternative 6 would not be substantial.

4.20.8.2 CEQA Significance Determinations

The CEQA significance determinations for any future projects under Alternative 6 would be the same as for Alternative 1.

4.20.9 Cumulative Impacts

4.20.9.1 Geographic Extent/Context

The geographic area for cumulative wildland fire impacts includes the area within one mile of the site boundary for wildland fire impacts and the temporal scope for cumulative wildland fire impacts includes the duration of construction, operation, and decommissioning of the Proposed Action. Two of the cumulative projects described in Table 4.1-1 are within the cumulative study area for wildland fire; these are the Coyote Wells Specific Plan and the Sunrise Powerlink transmission line. In addition, the existing Interstate 8 is within the cumulative study area for wildland fire.

4.20.9.2 Existing Cumulative Conditions

A cumulative wildland fire impact would occur if multiple projects were to increase the frequency of fires in the same location, which would result in indirect impacts on natural resources as described in Section 4.20.3.

4.20.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that the Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-2, their effects were considered in the cumulative impacts analyses in this EIS/EIR. The reasonably foreseeable projects within the cumulative geographic and temporal context of the Proposed Action for wildland fire ecology impacts are:

- Sunrise Powerlink
- Coyote Wells Specific Plan
- SDG&E Proposed Photovoltaic Solar Field

4.20.9.4 Construction

The Coyote Wells Specific Plan, the Sunrise Powerlink, and Interstate 8 are located within the cumulative study area for wildland fire. The Proposed Action is scheduled to be under construction concurrently with the Coyote Wells development and after construction of the Sunrise Powerlink in the Ocotillo area. Interstate 8 is an existing project. Construction and residential use of the Coyote Wells development could result in wildfire ignitions due to the use of heavy equipment, smoking, or welding. Transmission lines can cause wildfire ignitions if maintenance is not properly conducted, if a low-flying plane or helicopter were to crash into the line, or sometimes as a result of wildlife collisions. Ignitions from Interstate 8 could originate from drivers throwing cigarette butts out car windows. Wildfire ignitions due to construction of these cumulative projects could result in wildfire ignitions. Wildfire ignitions from the Proposed Action could combine with ignitions from Coyote Wells, the Sunrise Powerlink, and drivers on Interstate 8 to increase the frequency of wildfires above the baseline fire frequency. The combination of these projects being constructed concurrently could substantially increase the frequency of fire in the area above natural conditions. With mitigation measures required for the Proposed Action (Fire-1, Veg-1d), the contribution of the Proposed action to this cumulative impact would be minimized, and similarly, the extensive fire-safe mitigation measures required for the Sunrise Powerlink Project and the fire-safe project design features of the Coyote Wells development would minimize the potential for wildfire ignitions from these sources. As a result, the overall cumulative increase in fire frequency would not be substantial from the Proposed Action and the cumulative project.

4.20.9.5 Operation and Maintenance

The Proposed Action is scheduled to in operation concurrently with the existence of the Coyote Wells residential development and portions of the Sunrise Powerlink. Interstate 8 is an existing project. Residential use of the Coyote Wells development could result in wildfire ignitions due to the use of outdoor equipment or smoking. Transmission lines can cause in wildfire ignitions if maintenance is not properly conducted, if a low-flying plane or helicopter were to crash into the line, or sometimes as a result of wildlife collisions. Ignitions from Interstate 8 could originate from drivers throwing cigarette butts out car windows. Wildfire ignitions due to operation and use of these cumulative projects could result in wildfire ignitions. Wildfire ignitions from the Proposed Action could combine with ignitions from Coyote Wells, the Sunrise Powerlink, and drivers on Interstate 8 to increase the frequency of wildfires above the baseline fire frequency. The overall cumulative effect would not be substantial in this area due to a combination of project-level mitigation measures to minimize fire risk from the cumulative projects. With mitigation measures required for the Proposed Action (Fire-1, Veg-1d), the contribution of the Proposed Action to this cumulative impact would be minimized by requiring implementation of a risk assessment of the invasive weed species currently known within the study area, procedures to control their spread on site, and procedures to help minimize the introduction of new weed species. Because this mitigation measure would not disturb or disrupt the natural environment and would not threaten the health or safety of people, its implementation would not result in adverse impacts.

4.20.9.6 Decommissioning

The Proposed Action would be decommissioned several decades into the future, and there may be other developments at that time that may occur concurrently with project decommissioning. It is anticipated that the Sunrise Powerlink and Interstate 8 would be in existence at the time of OWEF decommissioning. Operation and use of these cumulative projects could result in wildfire ignitions. Wildfire ignitions from decommissioning of the Proposed Action could combine with ignitions from Coyote Wells, the Sunrise Powerlink, and drivers on Interstate 8 to increase the frequency of wildfires above the baseline fire frequency. The overall cumulative effect would not be substantial in this area due to a combination of project-level mitigation measures to minimize fire risk from the cumulative projects. With mitigation measures required for the Proposed Action (Fire-1), the contribution of the Proposed Action to this cumulative impact would be minimized by requiring implementation of a risk assessment of the invasive weed species currently known within the study area, procedures to control their spread on site, and procedures to help minimize the introduction of new weed species. Because this mitigation measure would not disturb or disrupt the natural environment and would not threaten the health or safety of people, its implementation would not result in adverse impacts.

4.20.9.7 CEQA Significance Determination

Significance conclusions for the impacts identified are presented below based on the CEQA Significance Criterion presented in Section 4.20.2.

- **Fire-1.** As described in Sections 4.20.9.4 through 4.20.9.6, wildfire ignitions from construction, operation, and decommissioning of the Proposed Action could combine with ignitions from Coyote Wells, the Sunrise Powerlink, and drivers on Interstate 8 to increase the frequency of wildfires above the baseline fire frequency in the area. With mitigation measures required for the Proposed Action

(Fire-1, Veg-1d), the contribution of the Proposed Action to this cumulative impact for Wildland Fire Ecology would be minimized and would not be significant for the reasons described above.

4.20.10 Mitigation Measures

Fire-1 The Applicant shall develop and implement a Fire Safety Plan for use during construction and decommissioning. The Applicant shall submit the Fire Safety Plan, along with maps of the project site and access roads, to BLM FIRE and the Imperial County Fire Marshall for review and approval prior to the issuance of a right of way grant. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

a. All internal combustion engines used at the project site shall be equipped with spark arresters. Spark arresters shall be in good working order.

b. Light trucks and cars shall be used only on roads where the roadway is cleared of vegetation. Mufflers on all cars and light trucks shall be maintained in good working order.

c. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees.

d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.

e. Personnel shall be trained in the practices of the Fire Safety Plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.

f. The Applicant shall make an effort to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall easily accessible to personnel.

g. Smoking shall be prohibited in wildland areas and within 50 feet of combustible materials storage, and shall be limited to paved areas or areas cleared of all vegetation.

h. Fires ignited onsite shall be immediately reported to BLM FIRE and the Imperial County Fire Department.

i. The engineering, procurement, and construction contract(s) for the proposed project shall clearly state the requirements of this mitigation measure.

Veg-1d This measure is presented in Section 4.17.10.

Mitigation Measure Fire-1 would require development and implementation of a fire management plan, including minimum standards for fire-safe practices during construction, which would minimize the potential for a wildfire ignition to occur as a result of project-related construction activities and the presence of personnel on site. Because these mitigation measures would not disturb or disrupt the natural environment and would not threaten the health or safety of people, their implementation would not result in adverse impacts.

The proposed noxious weed plan in combination with Mitigation Measure Veg-1d would minimize the potential for weed colonization and dominance on site by requiring implementation of a risk assessment of the invasive weed species currently known within the study area, procedures to control their spread on site, and procedures to help minimize the introduction of new weed species. Implementation of this mitigation measure would not completely eliminate the introduction of noxious weeds into the study area, but it would minimize their introduction and control their spread on the project site, nor would it result in any additional adverse impacts.

4.20.11 Residual Impacts After Mitigation

Implementation of mitigation measures defined in Section 4.20.10 would minimize the impacts of the Proposed Action on wildland fire incidence in the surrounding area. There would be no unavoidable adverse impacts.

4.21 Wildlife Resources

4.21.1 Methodology for Analysis

This analysis is based on information from the focused wildlife surveys conducted for the proposed OWEF as well as information found in the CNDDB and lists of BLM-sensitive species (see Section 3.23 for details). As discussed in Chapter 3.23, focused wildlife surveys were conducted for: flat-tailed horned lizard (*Phrynosoma mcallii*; FTHL), barefoot banded gecko (*Coleonyx switaki*), burrowing owl (*Athene cunicularia*), golden eagle (*Aquila chrysaetos*) nests, migrating raptors, avian point counts, bats, and Peninsular bighorn sheep (*Ovis canadensis nelsoni*; PBS).

4.21.2 CEQA Significance Criteria

The indicators listed below were used to determine if the proposed OWEF would result in significant impacts to wildlife resources pursuant to CEQA. These indicators are the same as the significance criteria for biological resources listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. Would the proposed OWEF:

Wild-1 *Have a substantial adverse effect, either directly, or through habitat modifications on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations or by the CDFG or the USFWS; and/or*

Wild-2 *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Wild-3 *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Wild-4 *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The proposed OWEF would not conflict with local policies or ordinances protecting biological resources (Significance Criterion Wild-3) because the county has no jurisdiction over federal lands (County of Imperial, 1993). Where the proposed OWEF occurs on non-federal lands, it would be consistent with the Imperial County General Plan's Land Use and Conservation and Open Space elements (County of Imperial, 1993) and Land Use Ordinance (County of Imperial, 2009).

The proposed OWEF would not conflict with the provisions of an approved local, regional, or state habitat conservation plan (Significance Criterion Wild-4) since no such plan is applicable to the proposed OWEF site.

For the proposed OWEF, the criteria numbered Wild-3 and Wild-4 were determined to be inapplicable or would result in no impact, and are therefore not addressed further in the impact analysis presented in this section.

4.21.3 Alternative 1: Proposed Action

4.21.3.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts covers construction, O&M, and decommissioning of the proposed OWEF.

Construction

Flat-Tailed Horned Lizard

Direct effects to FTHL from construction include mortality and habitat loss. As noted in Section 3.23, FTHL were only found in the northeast portion of Site 1 (east of Shell Canyon Road). In accordance with the FTHL Rangewide Management Strategy, all contiguous habitat within two miles of a FTHL sighting will be considered occupied by FTHL. The portion of the OWEF site considered occupied (includes assumed occupied habitat) by FTHL is shown in Figure 3.23-1. Construction activities such as grading, the movement of construction vehicles or heavy equipment, and the installation of OWEF facility components may result in the direct mortality, injury, or harassment of FTHLs including the potential crushing of individuals, disruption of FTHL essential behaviors, disturbance by noise or vibrations from heavy equipment, and handling of FTHL during relocation efforts. These potential impacts identified in the FTHL Rangewide Management Strategy would be avoided or minimized in accordance with the FTHL Rangewide Management Strategy by the implementation of Mitigation Measures Wild-1a (compliance monitoring by the Designated Biologist), Wild-1b (biological monitoring by a FTHL-experienced biologist), Wild-1c (Worker Education Awareness Program), Wild-1d (delineating work areas and confining work activities to approved work areas), Wild-1e (15 mile-per-hour speed limit along access roads in FTHL habitat), Wild-1f (grading [to the maximum extent practicable] during the active season), Wild-1g (removal of FTHL from harm's way), and Veg-1a (minimizing construction-related impacts to the maximum extent practicable).

There are approximately 2,752.3 acres of FTHL-occupied habitat (including assumed occupied habitat, as described in Section 3.23) in the proposed OWEF site. The proposed OWEF would permanently impact approximately 23.9 acres of this habitat and would temporarily impact approximately 108.4 acres of this habitat (Figure 4.21-1). Impacts to occupied FTHL habitat would be mitigated by the implementation of Mitigation Measures Air-1 (*Implement a Fugitive Dust Control Plan*), Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring by a FTHL-experienced biologist*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads in FTHL habitat*), Wild-1h (Compensation *for habitat loss in accordance with the FTHL Rangewide Management Strategy*), Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*), and Veg-2b (*Revegetating temporarily disturbed areas*). Mitigation Measure Wild-1h requires compensation for this habitat loss in accordance with the FTHL Rangewide Management Strategy.

Construction will be conducted primarily during daylight hours; however, if it becomes necessary to conduct work at night in FTHL habitat, lighting will be needed for worker safety. This lighting will be directed toward the interior of the disturbance area or at the specific location being constructed in order to minimize adverse effects. Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b

(*Biological monitoring by a FTHL-experienced biologist*), Wild-1c (*Worker Education Awareness Program*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Potential indirect effects during construction include increased predation, and habitat degradation that may adversely affect FTHL

Avian predators of the FTHL, such as common raven (*Corvus corax*), loggerhead shrike (*Lanius ludovicianus*), and American kestrel (*Falco sparverius*), and non-avian predators, such as round-tailed ground squirrel (*Spermophilus tereticaudus*), may be drawn to the OWEF due to the increase in food sources (such as garbage cans) and perching/roosting areas (such as the fences and power poles associated with the substation/switchyard, permanent meteorological tower, and the O&M building). These species, particularly common ravens and round-tailed ground squirrels, would be attracted to food waste during construction if it is not properly contained. Increases in predator species may indirectly impact FTHL if predation on FTHL increases. Impacts associated with predators would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), and Wild-1j (*Implementation of a Raven Control Plan*).

The proposed OWEF would indirectly affect FTHL if it resulted in the introduction of invasive weeds that create vegetative cover that is too dense for FTHL to navigate. As mentioned above, disturbance of soil and vegetation over a total of 132.3 acres of occupied FTHL habitat on the proposed OWEF site will take place during construction. This disturbance can encourage invasive weeds to encroach into the habitat from areas outside the site. In addition, construction vehicles and equipment can transport invasive weed seeds and vegetative parts, within their tires and other various parts under the vehicles, to the proposed OWEF site from other regions. Invasive weed species have the potential to out-compete native species and change the overall quality of the habitat. Habitat degradation could occur through the spread of existing invasive weed species within the area of the proposed OWEF site (e.g., Saharan mustard [*Brassica tournefortii*]) or through the introduction of new invasive weed species to the area of the proposed OWEF site. Impacts associated with introduction or spread of invasive weed species would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (B*iological monitoring by a FTHL-experienced biologist*), Wild-1c (*Worker Education Awareness Program*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Barefoot Banded Gecko

The barefoot banded gecko was not detected despite exhaustive searches and is assumed to be absent within the 2010 and 2011 survey areas (Dugan, 2011a and 2011b; Figure 3.23-2). Therefore, no impacts would occur to the barefoot banded gecko; no mitigation measures would be required; and a 2081 Incidental Take Permit would not be required unless a barefoot banded gecko is found on site during preconstruction surveys for other species.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

The red-diamond rattlesnake and rosy boa were observed in rocky habitat in the southwest portion of Site 1 and in the western portion of Site 2 during surveys for the barefoot banded gecko. Rosy boa occurs in desert, arid scrub, brushland, and rocky chaparral-covered foothills - particularly where moisture is available, which may limit its distribution and abundance on the site. Red-diamond rattlesnake occurs in arid scrub and rocky desert flats adjacent to desert mountain slopes. Potential impacts to these species could include direct crushing of individual rosy boas and red-diamond rattlesnakes during vegetation clearing and grading, removal of habitat, and indirect disturbance as a result of noise, vibration, night lighting, invasive weed species, and fugitive dust, similar to the indirect impacts described above for FTHL. These potential impacts would be minimized through implementation of Mitigation Measures Wild-1a (Compliance monitoring by the Designated Biologist), Wild-1b (Conduct biological monitoring, inspect all potential wildlife pitfalls [e.g., trenches, bores, other excavations], and remove wildlife as necessary), Wild-1c (Worker Education Awareness Program), Wild-1d (Delineating work areas and confining work activities to approved work areas), Wild-1e (15 mile-per-hour speed limit along access roads), Wild-1i (Use of shielded directional lighting that is pointed downward), and Veg-1a (Minimizing construction-related impacts to the maximum extent practicable).

Burrowing Owl

Direct effects to burrowing owls from construction can include destruction of burrows/burrow entrances, mortality, and habitat loss surrounding occupied burrows, night lighting, and noise. "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy (e.g., an owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance) within the last 3 years (CBOC 1993). Construction activities such as grading, the movement of construction vehicles or heavy equipment, and the installation of OWEF facility components may result in the direct mortality through crushing of adults, young, or eggs within burrows or entrapment of/injury to owls within burrows if burrow entrances become blocked. Construction will be conducted primarily during daylight hours; however, if it becomes necessary to conduct work at night, lighting will be needed for worker safety. Night lighting has the potential to disrupt burrowing owl breeding/nesting behavior if it would be placed in close proximity to occupied burrows. Any night lighting to be used during construction will be directed toward the interior of the disturbance area or at the specific location being constructed in order to minimize adverse effects to owls and other wildlife species. Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Construction noise could impact breeding behavior or reproductive success. In accordance with CDFG (1995), avoidance is the preferred method for dealing with potential project impacts to burrowing owls. To avoid and minimize potential noise impacts on burrowing owls, no construction activities would occur within 160 feet of occupied burrows during the non-breeding season (September 1 – January 31) and no construction activities would occur within 250 feet of occupied burrows during the breeding season (February 1 – August 31), in accordance with Mitigation Measure Wild-2a. Throughout the proposed OWEF site, 19 occupied burrows were observed; 1 of those would be directly impacted by proposed - OWEF construction, and 2 more occur within 160 feet of proposed OWEF construction and would also be considered directly impacted (Figure 3.23-3), in accordance with the guidance provided in the CDFG Staff Report on Burrowing Owl Mitigation (CDFG 1995). Impacts associated with destruction of burrows/burrow entrances and mortality of owls would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1i (*Use of shielded directional lighting that is pointed downward*), Wild-2a (*Conduct pre-construction burrowing owl surveys, avoidance of occupied burrows, and passive relocation if avoidance* *is not possible*), Wild-2b (*Vegetation clearing outside of the general avian breeding season*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

The proposed OWEF would result in a loss of 26 acres of burrowing owl foraging habitat resulting from construction activities occurring within 300 feet occupied burrows (6.5 acres of habitat would be lost at each of the 3 occupied burrows in accordance with CDFG [1995]). To offset the loss of foraging and burrow habitat on the OWEF site, compensation would be required through off-site acquisition and permanently protection of 19.5 acres of occupied foraging habitat, on-site revegetation of temporary impacted areas and/or on-site restoration/enhancement of disturbed habitat, in accordance with Mitigation Measure Wild-1m. If off-site acquisition and protection is pursued, the acquisition of occupied owl foraging habitat may overlap with the off-site mitigation required for sensitive vegetation communities (Mitigation Measure Veg-2a), if approved by the BLM and Wildlife Agencies. Furthermore, impacts to burrowing owl foraging habitat would be minimized through the implementation of Mitigation Measures Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Potential indirect effects during construction include degradation of foraging habitat.

The proposed OWEF would indirectly affect burrowing owls if it resulted in the introduction or spread of invasive weed species that result in changes in prey abundance or species assemblages. Soil disturbance during construction can encourage invasive weeds to encroach into the habitat from areas outside the site and weed seed can be introduced to the site if construction vehicles and equipment entering the site is not cleaned properly. Invasive weed species have the potential to out-compete native species and change the overall quality of the habitat. Impacts associated with introduction or spread of invasive weed species would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Golden Eagle

There are no golden eagle nests on the proposed OWEF site. However, the proposed OWEF occurs in the distribution range of golden eagles. There are 5 nesting territories close to the OWEF site, the closest of which includes an inactive nest 2 miles north of the proposed OWEF in the Coyote Mountains (2 of the 5 territories were determined to be active during the 2010 golden eagle nest surveys; WRI, 2011). The closest active nest is approximately 3.2 miles to the north of the proposed OWEF, in the Coyote Mountains. The other active nest is approximately 6 miles to the southwest of the proposed OWEF, near Table Mountain. The number of active territorial pairs of golden eagles in the area surveyed could be higher than the 2 identified in 2010 due to ongoing drought in southern California (WRI, 2011). Construction of the proposed OWEF would not result in direct or indirect impacts to golden eagle nests because of the distance between nest sites and the proposed OWEF and the topographic separation between the nest sites and the proposed OWEF (i.e., the proposed OWEF is in a valley; the nest sites are in the mountains; and the proposed OWEF is not visible from the nest sites).

Construction of the proposed OWEF would permanently remove approximately 155.5 acres of vegetation that could be used by the golden eagle as foraging habitat. The proposed OWEF temporary impacts to approximately 499.1 acres of vegetation would be considered a short-term impact because those areas would be revegetated following construction. Golden eagle observations at the proposed OWEF site were low over the nearly 3 years of raptor migration counts (0.01 observation/hr during fall 2009 migration counts, none during spring 2010 migration counts, and 0.02 observation/hr during fall 2010 and spring 2011 migration counts). These observations suggest low use of the proposed OWEF site for foraging, especially when compared with other projects (see Section 3-23 for details). Impacts to golden eagle foraging habitat would be minimized by implementation of Mitigation Measures Wild-1b (*Biological monitoring during construction*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1o (*Implement an Eagle Conservation Plan*), Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*), Veg-2a (*Provide habitat compensation/restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Revegetate temporarily disturbed areas*). Construction will be conducted primarily during daylight hours; however, if it becomes necessary to conduct work at night, lighting will be needed for worker safety. This lighting will be directed toward the interior of the disturbance area or at the specific location being constructed in order to minimize adverse effects to golden eagles and other wildlife species. Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Potential indirect impacts to golden eagle foraging habitat during construction include night lighting and degradation of habitat.

Degradation of habitat would indirectly affect golden eagle foraging if it resulted in the introduction or spread of invasive weed species or changes in prey abundance or species assemblages, introduction of invasive weed species as described in the Indirect Impacts section for the burrowing owl. Impacts associated with introduction or spread of invasive weed species would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring*), Wild-1c (*Worker Education Awareness Program*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Nesting Birds

The proposed OWEF could result in direct and indirect impacts to nesting bird species protected under California Fish and Game Code sections 3503.5 and 3511 and the Migratory Bird Treaty Act. Construction activities, primarily though removal of vegetation, could cause destruction or abandonment of active nests or the mortality of adults, young, or eggs. Several special status bird species are known or suspected to nest on or in close proximity to the proposed OWEF, including burrowing owl, prairie falcon, loggerhead shrike, and Le Conte's thrasher (Figure 4.21-2). Impacts to burrowing owl nesting and the associated mitigation requirements are discussed in the Burrowing Owl section above. Direct impacts to nesting bird species, including special status species, would be mitigated through implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1p (*Implement a Bird and Bat Conservation Strategy*), Wild-2b (*Vegetation clearing outside of the general avian breeding season or conduct pre-construction nesting bird surveys and incorporate a 100-foot nest buffer around active nests*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

Potential effects to nesting birds during construction include night lighting and construction noise, as described in the Impacts section for burrowing owl. Impacts associated with night lighting and construction noise would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1i (*Use of shielded directional lighting that is pointed downward*), Wild-2b (*Vegetation clearing outside of the general avian breeding season or conduct pre-construction nesting bird surveys and incorporate a 100-foot nest buffer around active nests*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

Bats

No bat roosts are known to occur within or adjacent to the proposed OWEF; therefore, impacts to bat roosts are not anticipated. The proposed OWEF could result in indirect impacts to bat species if construction activities disrupt nighttime foraging habits. Bat use of the proposed OWEF site is remarkably low. More than 70 percent of the surveys conducted for the proposed OWEF failed to record a single bat during the night, and bat activity was generally restricted to the perimeter of the proposed OWEF site, with infrequent observations of bats. These results are most likely due to a lack of any form of standing water on the site, and therefore, a lack of abundant invertebrate prey that is associated with standing water. Therefore, construction activities would not affect the bat prey base. If night lighting is used during construction, it is expected that insects would be attracted to the lighting, which could in turn attract bats to the construction area. Use of night lighting could therefore have a positive effect on bat species if the lighting attracts and concentrates prey species. Bats that might forage around nighttime construction lighting are not expected to be adversely affected because the WTGs would not yet be in operation so collision with these project components would not occur. Even so, implementation of Wild-1j (*Minimize, shield, and direct night lighting*) and Wild-1p (*Implement a Bird and Bat Conservation Strategy*) are required to minimize construction impacts.

American Badger

Construction of the proposed OWEF has the potential to injure or kill American badgers by crushing them in their dens or crushing den entrances with construction equipment, which would prevent badgers from escaping, similar to the direct impacts described for burrowing owl above. Several of the American badger dens documented on the OWEF site occur in close proximity to proposed project features (Figure 4.21-2). Impacts associated with destruction of dens/den entrances and mortality of American badgers would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1i (*Use of shielded directional lighting that is pointed downward*), Wild-2c (*Pre-construction survey for the American badger, avoidance of active dens, and/or badger relocation*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

Peninsular Bighorn Sheep

No OWEF project components are proposed for construction on land currently occupied by the PBS. The 2011 HELIX/Western Tracking Institute PBS study indicates that the proposed OWEF site is not currently occupied with the exception of the area of the I-8 Island in the southwest portion of Site 1—where no OWEF project components are proposed (Figure 4.21-3). No recent PBS sign has been found in the PBS study areas except for the I-8 Island and along the portion of Devil's Canyon that lie to the south of Site 1 (Figure 4.21-3).

There would be no direct impacts to PBS designated critical habitat (it does not occur on the proposed OWEF site; Figure 4.21-1), occupied habitat in the I-8 Island, or any PBS watering holes or guzzlers (man-made catch basins designed to enhance natural waters) because none exist on the proposed OWEF site. The potential direct effects of the proposed OWEF include impacts to USFWS Essential Habitat, mortality of PBS as a result of collision with construction equipment, elimination of access to foraging areas, disruption of reproduction or lambing activities, prevention of dispersal or intermountain movements.

Habitat Impacts

The proposed OWEF would directly impact 167.2 acres of USFWS Essential Habitat (124.1 acres of temporary impacts and 43.1 acres of permanent impacts) as a result of construction grading, trenching, and vegetation removal on the OWEF site. A total of 3,691.9 acres of USFWS Essential Habitat occurs on the proposed OWEF site. Impacts to PBS Essential Habitat would be minimized and mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineate work areas and confining work activities to approved work areas*), Wild-1q (revegetate temporary impacts to PBS Essential Habitat), Wild-1r (*Provide compensation for permanent impacts to PBS Essential Habitat*), Veg-1a (*Minimize construction-related impacts to the maximum extent practicable*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Collision with Construction Equipment

Construction equipment has the potential to impact PBS as a result of colliding with PBS resulting in injury or death if PBS are present in the project work areas. The potential effect of colliding with construction equipment would be mitigated through implementation of Mitigation Measures Wild-1a (compliance monitoring by the Designated Biologist), Wild-1b (*Biological monitoring*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), and Wild-1t (*Retain a Bighorn Sheep Monitor to monitor construction activities in Essential Habitat and implement a 1,000-foot buffer if PBS are observed on site*).

Access to Foraging Areas

The proposed OWEF has the potential to discourage PBS from foraging in the desert flats and desert washes within the USFWS Essential Habitat if noise, human activity, and/or equipment disturbance during construction prevents PBS from accessing foraging areas. The proposed OWEF would be constructed in two phases and approximately five to 10 WTGs can be erected each week, which means not all of the proposed OWEF's features would be constructed simultaneously. As such, PBS would have access to thousands of acres of other foraging areas on the proposed OWEF site during construction at any one particular WTG location. Construction noise and activities that result in avoidance of foraging areas would affect PBS, but this effect would be minimized by implementation of Mitigation Measures Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), and Wild-1t (Ret*ain a Bighorn Sheep Monitor to monitor construction activities in Essential Habitat and implement a 1,000-foot buffer if PBS are observed on site*).

In addition, an approximately 50-foot tall biological monitoring observation tower would be located in the central portion of Site 1 (referred to by the Applicant as the Advanced Biological Operations Command and Control Center [ABOCC]) and would include a platform with a 360 degree view of the area. The observation tower would also include an air-conditioned central monitoring control room equipped with radar monitors, video monitors and controls, and radio telemetry data monitors to allow for real-time monitoring. A high resolution video camera and an advanced radar system (Merlin Avian Radar System) would be programmed to monitor for PBS during construction. The radar system would include vertical and horizontal Doppler radar and tracking software that would link radar detections to the video monitoring system. The observation tower and radar system would be used by the Designated Biologist, Biological Monitors, and Bighorn Sheep Monitor to monitor for PBS on the OWEF site during construction, as required by Mitigation Measure Wild-1t.

Reproduction/Lambing Activities

Project construction activities could affect PBS if the activities result in disturbance to reproduction/lambing areas. The OWEF project has been designed to place WTGs, access roads, and other proposed features outside of potential reproduction/lambing areas (i.e., steep rocky areas). For the proposed OWEF, 8 WTGs (WTGs 22-28 and WTG 77) are proposed in direct line of sight and within 3,900 feet (1,200 meters) of the known lambing sites in the I-8 Island, and construction activities in these areas may cause the ewes to abandon these sites or otherwise disrupt normal lambing behavior (Figure 4.21-3). To avoid impacts to the lambing sites, construction of WTGs within 3,900 feet of PBS lambing sites will be precluded from January 1 through June 30 (i.e., the PBS lambing season) when there is direct line of site between the lambing site and the construction area, in accordance with Mitigation Measure Wild-2d. Additionally, site preparation and use of the rail unloading area will be precluded during the lambing season per Mitigation Measure Wild-2d.

Noise from construction is not expected to affect PBS reproduction or lambing activities because of the high existing noise levels from traffic on I-8. HELIX collected preliminary noise measurements within the I-8 Island in March 2011 to determine the ambient noise levels from vehicle traffic. Ambient noise levels in the habitat directly adjacent to the westbound lanes of I-8 ranged from 60-80 dB(A), and ambient noise levels further from the westbound lanes of I-8 averaged between 50-55 dB(A). Construction activities are not expected to result in increases in noise levels at the known PBS lambing sites for 3 main reasons: (1) there will be a seasonal restriction (January through June) on all construction activities within 1,200 meters (approximately 3,900 feet) of lambing sites as required by Mitigation Measure Wild-2d; (2) all other construction activities would be at least 0.5 mile from the known lambing areas, and the noise would dissipate across the landscape; and (3) there is no suitable lambing habitat on the proposed OWEF site; lambing areas are typically located in rugged, secure locations on rocky hillsides to allow ewes to keep lambs protected, and these areas are found outside the proposed OWEF site.

Intermountain Connectivity

PBS are closely associated with mountainous habitat and often are hesitant to venture far from escape terrain (Geist, 1971, as cited in USFWS, 2000). The proposed OWEF would not directly affect PBS intermountain movement for the following reasons: (1) the known movement area between Carrizo Gorge and the Coyote Mountains is along Sweeney Pass (approximately 6 miles northwest of Site 1); (2) the known movement corridor between Carrizo Gorge and the I-8 Island is approximately 2 miles to the south of the proposed OWEF site; (3) the proposed OWEF was redesigned to remove proposed OWEF features originally designed in the southwest portion of Site 1 and to move proposed OWEF features further from

Devil's Canyon; and (4) the proposed OWEF site will not be fenced[1], and post-construction human activity levels are expected to be similar to the pre-construction activity levels due to OHV use, Border Patrol use, illegal activities (e.g., immigrant use and drug smuggling activities), and recreational use. In addition, human activity levels within currently occupied PBS habitat during construction are expected to be similar to pre-construction conditions because the project does not contain new roads or project features within areas currently occupied by PBS.

Behavioral Responses

The proposed OWEF would indirectly affect PBS if construction activities result in behavioral changes. A number of studies have been conducted to evaluate bighorn sheep responses to human activities (e.g., Hicks and Elder, 1979; Keller and Bender, 2007; Papouchis et al., 2001) and generally conclude that bighorn sheep increase their distance to humans, especially when they are approached, but the effects of disturbance are temporary. The proposed OWEF would not be constructed in occupied PBS habitat, would not impact or block access to watering holes, and does not include new access roads into known occupied PBS habitat. However, human activity, noise, and use of night lighting have the potential to indirectly impact PBS. To minimize potential PBS behavioral responses to construction activities, the following mitigation measures will be implemented: Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1t (*Retain a Bighorn Sheep Monitor to monitor construction* activities in Essential Habitat and implement a 1,000-foot buffer if PBS are observed on site), and Wild-2e (Collect data on PBS movements during the construction phase). Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (C*ompliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Habitat Degradation

The proposed OWEF would result in habitat degradation primarily due to the introduction of invasive weed species as described in the Indirect Impacts section for the FTHL. Implementation of Mitigation Measure Veg-1d, which requires the preparation and implementation of an Integrated Weed Management Plan, would reduce this potential impact during construction and for the life of the proposed OWEF.

Operation and Maintenance

Flat-Tailed Horned Lizard

General O&M activities that would be conducted such as visual inspections, oil changes, and gearbox lubrication will result in regular truck traffic on access roads throughout the year, which may result in direct mortality or injury to individual FTHL. In addition, grading of access roads will occur as needed (but will be scheduled to least disturb sensitive wildlife), in accordance with Mitigation Measures Wild-1c and Wild-1x. FTHL injury or mortality could also potentially occur due to weed abatement activities, including application of chemicals or mechanical methods. These potential impacts would be avoided or minimized by the implementation of Mitigation Measures Wild-1u (*Speed limit of 15 miles per hour on*

---

[1] The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

access roads in occupied FTHL habitat, biological monitoring [relocation of FTHL if necessary] for O&M off of access roads) and Wild-1v (*Submit annual FTHL Status Report*).

As with construction, avian predators of the FTHL may be drawn to the OWEF due to the increase in food sources such as garbage cans and perching areas such as the fences surrounding the substation/switchyard and the O&M building. A potential increase in avian predators may indirectly affect FTHL. Impacts associated with predators during O&M would be mitigated by the implementation of Mitigation Measures Wild-1v (*Submit annual FTHL Status Report*), Wild-1w (*Implement the Raven Control Plan*) and Wild-1c/Wild-1x (*Implement and ensure compliance with a WEAP*) are required to minimize this potential impact to FTHL during O&M. In addition, an indirect impact to FTHL would occur if the number of avian and non-avian predators increases as a result of higher densities of perennial shrub species (Grant, 2005). Increases in perennial shrub species can occur if considerable amount of water are applied during the construction phase or O&M/revegetation phase. However, only the minimal amount of water needed for dust control would be applied during the construction phase in accordance with Mitigation Measure Air-1 and only the minimum amount of water needed for revegetation of temporary impact areas would be applied during the O&M phase, in accordance with Mitigation Measures Wild-1y and Veg-2b. Night lighting during O&M would be minimized through implementation of Mitigation Measure Wild-1aa (*Minimize night lighting during O&M*).

As with construction, increases in invasive plant species in occupied FTHL habitat would be indirect impacts to FTHL. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Barefoot Banded Gecko

As described above, the barefoot banded gecko is currently considered absent from the OWEF site. Therefore, no mitigation during O&M would be required for this species, and no 2081 Incidental Take Permit would be required unless the species is observed on site during O&M activities.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

Potential O&M impacts could include direct impacts such as crushing/killing of individuals and indirect disturbance as a result of noise, vibration, night lighting, introduction or spread of invasive weed species, and fugitive dust. Direct impacts to rosy boa and red-diamond rattlesnake during O&M would be minimized through implementation of Mitigation Measures Wild-1c/Wild-1x (*Implement and ensure compliance with a WEAP, including scheduling O&M to least disturb sensitive wildlife*), and Wild-1aa (*Minimize night lighting during O&M*). Indirect impacts to rosy boa and red-diamond rattlesnake during O&M would be minimized through implementation of Mitigation Measures Wild-1u (*Measures to reduce wildlife species mortality, including requiring vehicles to remain on designated maintenance roads*), and Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Burrowing Owl

O&M activities have the potential to affect burrowing owls if activities cause destruction of burrows or burrow entrances. Regular O&M activities, such as driving on access roads to make periodic inspections of WTGs, gear box inspections, and lubrication, are not expected to affect the species because activities will remain on permanently maintained access roads, crane pads, and permanent work areas. Implementation of Mitigation Measures Wild-1c/Wild-1x (*Implement and ensure compliance with a*

WEAP) and Wild-1e (limiting speed limits on access roads) would minimize impacts on burrowing owls from these types of O&M activities. Other O&M activities, such as vegetation management or regrading access roads that result in disturbance beyond the approved permanent footprint, have the potential to affect burrowing owls if activities cause destruction of burrows or burrow entrances, as described above for the construction phase of the project. These potential impacts to burrowing owls during O&M would be mitigated by the requirement to conduct a pre-construction burrowing owl survey in accordance with Mitigation Measure Wild-2a if O&M activities have the potential to disturb habitat outside of the approved permanent project footprint. To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes actions and reporting procedures to be used if nesting birds are encountered and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP. Impacts associated with night lighting during O&M would be minimized through implementation of Mitigation Measure Wild-1aa (*Minimize night lighting during O&M*).

As with construction, increases in invasive plant species would be indirect impacts to burrowing owl. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

The risk of collision of the burrowing owl with the WTGs is discussed in the Avian and Bat Collision Risk section below.

Golden Eagle

As with construction, O&M would not result in direct or indirect impacts to golden eagle nest sites because there are no golden eagle nests on the proposed OWEF site, and the nearest nest site is a minimum of 2 miles from the proposed OWEF site. O&M activities have the potential to remove golden eagle foraging habitat if regrading of roads or other O&M activities result in vegetation being removed adjacent to the permanent project footprint. If areas need to be regraded, they would be revegetated in accordance with Mitigation Measure Veg-2b. Therefore, O&M activities are not expected to impact golden eagle foraging on the OWEF site.

The risk of collision of the golden eagle with the WTGs is discussed in the Avian and Bat Collision Risk section below.

Nesting Birds

As with construction, O&M activities could result in direct and indirect impacts to nesting bird species protected under the California Fish and Game Code and Migratory Bird Treaty Act. Direct impacts to nesting birds could occur as a result of vegetation management or regrading of access roads, which could cause destruction or abandonment of active nests or the mortality of adults, young, or eggs. Direct impacts to nesting bird species would be mitigated through implementation of Mitigation Measure Wild-2b (*Vegetation clearing outside of the general avian breeding season or conduct pre-construction nesting bird surveys and incorporate a 100-foot nest buffer around active nests*) and Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*). To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes actions and reporting procedures to be used if nesting birds are encountered and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP. Impacts associated with night lighting during O&M would be minimized through implementation of Mitigation Measure Wild-1aa (*Minimize night lighting during O&M*).

As with construction, increases in invasive plant species would be indirect impacts to nesting bird species. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Bats

No bat roosts are known to occur within or adjacent to the proposed OWEF; therefore, impacts to bat roosts during O&M activities are not anticipated. As described in Section 3.23, bat use of the OWEF site was determined to be very low during surveys conducted in 2010, likely as a result of a lack of water sources on and adjacent to the site. Nighttime foraging habitats are not expected to be affected by O&M of the OWEF site because of the low use of the site. However, a minimal amount of night lighting is proposed for the site including at the O&M building and on top of some of the WTGs, which has the potential to attract and concentrate invertebrate prey items. Implementation of Mitigation Measures Wild-1aa would reduce the potential impact on bat species because it requires night lighting to be minimized, shielded, and directed down. Potential O&M impacts on bat species would be further minimized by implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*). Even with implementation of Mitigation Measures Wild-1p, Wild-1aa, and Wild-1bb, bats may be still attracted to areas where night lighting are used and this would increase their risk of collision with WTGs. The risk of collision of bats with the WTGs is discussed in the Avian and Bat Collision Risk section below.

Avian and Bat Collision Risk

Operation of the OWEF site would impact avian and bat species as a result of collisions with project features. Resident and migratory bird and bat species are at risk of collision with the 155 WTGs, four permanent (unguyed) meteorological towers, and the overhead transmission lines, which are limited to an approximately 600-foot-long section that would connect the switchyard to the new Sunrise Powerlink transmission line and an approximately 150-foot-long segment that would connect the proposed switchyard and proposed substation.

In accordance with Wind Turbine Guidelines Advisory Committee's (WTGAC's) recommendations to USFWS for wind projects in general, collision risk for the OWEF is defined as the likelihood that adverse impacts will occur to individuals or populations of species of concern as a result of wind energy development and operation (WTGAC, 2010). A weight-of-evidence approach is often used to analyze risk because relatively few methods are available for direct estimation of risk (Anderson et al., 1999, as cited in WTGAC, 2010). The WTGAC also indicates that "for most populations, risk cannot easily be reduced to a strict metric, especially in the absence of population viability models for most species. Consequently, estimating the quantitative risk to populations is usually beyond the scope of project studies due to the difficulties in evaluating these metrics, and therefore risk assessment will be qualitative" (WTGAC, 2010). Use data for proposed wind sites is often compared to use data of other wind sites to evaluate collision risk. The collision risk analysis presented below incorporates the quantitative data collected during two years of raptor migration count studies, a full year of avian point count studies, and four seasons of bat survey data on the OWEF site. Avian and bat use, observed flight heights, and species behaviors were incorporated into the qualitative collision risk assessment below. The analysis of bat collision risk includes potential impacts due to collision with turbine blades as well as barotrauma (lung damage that results from the air pressure reduction near spinning blades). Following that risk assessment is a discussion of risk assessment derived from the results of MERLIN™ Avian Radar Survey (DeTect, Inc., 2011).

As noted in Section 3.23, four seasons of raptor migration counts have indicated that raptor use of the site is low (an average of approximately 0.745 observation/hour). Raptor use on the OWEF is low when compared to similar studies conducted for other wind projects (HELIX, 2010c and 2011d). Red-tailed hawk and turkey vulture accounted for nearly 76 percent of the observations made during the four seasons of raptor counts (see Table 3.23-2). Many of the red-tailed hawk observations made were likely repeat observations of the same individual or individuals. These two species were also commonly observed within the proposed rotor swept area (RSA) range of approximately 100-450 feet above ground level. Based solely on use, red-tailed hawk and turkey vulture would have the greatest risk of collision.

Resident raptor species (red-tailed hawk, prairie falcon, and American kestrel) use the site regularly for foraging and perching but do not occur in high densities. Migratory raptor species observed on site include turkey vulture, osprey, Cooper's hawk, sharp-shinned hawk, merlin, ferruginous hawk, and Swainson's hawk. With the exception of turkey vultures, migratory raptor species were uncommon during the fall and spring. The migratory raptor species listed above (excluding turkey vultures) were observed infrequently during the study period; 10 or fewer observations were made of each of the following species during the four seasons of raptor counts: osprey, Cooper's hawk, sharp-shinned hawk, merlin, and ferruginous hawk. Based solely on behavioral use of the site, resident raptor species would be at greater risk to collision than migratory raptor species because they were more frequently observed foraging over the site, including in the proposed RSA.

The following sections analyze collision risk for golden eagles, other special status raptor species, other avian species, and bats.

Golden Eagle

The risk of collision of the golden eagle with the WTGs would occur when eagles use the proposed OWEF site for foraging or during migration. The greatest risk of collision for golden eagles, as with other raptor species, is during foraging because eagles are focused on prey items and may not see the spinning WTG blades. Golden eagle use of the proposed OWEF site for foraging is low, however. The duration of each golden eagle observation (i.e., the amount of time that the eagles were documented on or immediately adjacent to the site) ranged from 1 minute to 1 hour, with most observations lasting from 2 to 10 minutes. The results of the extensive observation hours on the proposed OWEF site indicate that the proposed OWEF site is occasionally used by eagles for foraging, but it was not part of a regularly used foraging area in fall or spring. The foraging behavior observed on site included time flying within the proposed RSA. Several of the golden eagle observations were of eagles in directional flight over the site at an elevation of 1,000 feet or more and these individuals are presumed to be migrating individuals. Because golden eagle use of the proposed OWEF site is low (0.01 observation/ hour made over the four seasons of raptor counts; HELIX 2010c and 2011d), the collision risk is considered low.

Golden eagle collision risk impacts would be minimized though implementation of Mitigation Measures Wild-1o/Wild-1ff (*Implement an Eagle Conservation Plan*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

To further reduce the collision risk impact to golden eagles, the Applicant has proposed staffing a biologist full time during daylight hours for the first 10 years of operation of the OWEF project in the proposed biological observation tower, in accordance with the details provided in the draft Eagle Conservation Plan prepared by OE LLC. The draft Eagle Conservation Plan was submitted to the USFWS, CDFG, and BLM for review in March 2011. The primary purpose of staffing a biologist at the biological observation tower during the first 10 years of operations would be to detect golden eagles prior to eagles flying in to the site using the Applicant's Merlin Avian Radar System (which would be placed on top of the ABOCC during O&M and would be programmed to monitor for raptors) and high-resolution video camera system technology, combined with the use of spotting scopes and binoculars. If eagles are detected, the biologist would have the ability to shut down the WTGs in portions of the site to help minimize and avoid collisions with WTGs. The WTG blades would come to a complete stop within 60 seconds of WTGs being shut down. The biologist would be responsible for determining when the eagle has left the project site so that operation of the WTGs could resume.

Other Special Status Raptor Species

Cooper's hawk does not commonly occur within the proposed OWEF site, and the 9 observations likely represent migratory birds passing through the proposed OWEF area. Each observation was a single individual, and four of the nine observations included flight heights in the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Wintering and resident Cooper's hawks are typically found in riparian habitats, which are lacking within the proposed OWEF site. Cooper's hawk use of the proposed OWEF site was low (0.003 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Like the Cooper's hawk, sharp-shinned hawk does not commonly occur within the proposed OWEF site, and the 5 observations likely represent migratory birds passing through the proposed OWEF site. Each observation was a single individual, and all five observations included flight heights below the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Both wintering and resident sharp-shinned hawk are typically associated with riparian habitats, which are lacking within the proposed OWEF site. Sharp-shinned hawk use of the proposed OWEF site was low (0.002 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Ferruginous hawk is an infrequent migrant through the proposed OWEF site and is not a common winter resident. The 4 observations likely represent migratory birds passing through the proposed OWEF site during fall/winter migration. Each observation was a single individual, and three of the four observations included flight heights in the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Wintering ferruginous hawks are more commonly observed in the agricultural complexes east of the proposed OWEF site where rodent populations are typically higher. Ferruginous hawk use of the proposed OWEF site was low (0.001 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Swainson's hawks were observed during previous migration studies only occasionally, and only as individuals, with the exception of a group of 14 that were seen traversing the site on October 22, 2010.

This group was observed moving from north to south at a height of approximately 2,000 feet. Season totals from previous surveys ranged from 1 to 17. In spring 2011, a larger number of Swainson's hawks (51) were observed. During spring migration, thousands of Swainson's hawks fly from South America to various destinations in the extreme north of the North American continent. Large groups of these hawks (dozens to many hundreds) are known to stop overnight and roost in the desert town of Borrego Springs, which is approximately 50 miles northwest of the proposed OWEF site. The majority of the Swainson's hawks observed within the site were moving northwesterly in the general direction of Borrego Springs. The precise route that Swainson's hawks use when flying from Mexico to Borrego Springs is unknown; however, it is likely that they primarily utilize areas containing ridgelines, which would indicate that their primary travel route would not be through the proposed OWEF site (HELIX, 2011d).

Although foraging behavior was not observed, it is expected that the Swainson's hawk could use the site for foraging during migration periods, which would put it at risk for collision. Collision risk for Swainson's hawk is considered low due to the species' low use of the proposed OWEF site during the fall and spring (0.026 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d).

Northern harrier was not frequently observed on the OWEF site (a total of 12 observations were made over four seasons of raptor counts; HELIX, 2010c and 2011d). Each observation was a single individual, and 4 of the 12 observations included flight heights in the proposed RSA. The species was observed foraging on site, which would put it at risk for collision. Northern harriers prey on a variety of species, specializing in small- to medium-sized mammals (Johnsguard, 1990), which occur throughout the proposed OWEF site. Harriers typically hunt by flying at heights closer to the ground, although they will commonly fly at heights within the RSA. The species' use of the proposed OWEF site was low (0.004 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Merlin does not commonly occur on the proposed OWEF site, and the 3 observations likely represent migratory birds passing through the proposed OWEF site. Each observation was a single individual and the three observations were at flight heights below the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Wintering merlins are not common in southern California. Merlin use of the proposed OWEF site was low (0.001 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Osprey was not frequently observed on the OWEF site (a total of 10 observations were made over four seasons of raptor counts; HELIX, 2010c and 2011d). Each observation was a single individual and 6 of the 10 observations were at a flight height in the proposed RSA. This species does not commonly occur in the desert during migration and is not expected to use the proposed OWEF site for hunting due to the lack of water bodies within the proposed OWEF site. The species is commonly observed at the Salton Sea, which is located approximately 30 miles northeast of the proposed OWEF site. Osprey use of the proposed OWEF site is low (0.004 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, the collision risk for this species is low.

The single observation of 2 peregrine falcons on the proposed OWEF site suggests that the species is a very rare visitor to the proposed OWEF site. The species' use of the proposed OWEF site is low (0.001 observation/hour made over the four seasons of raptor counts) and the species is not expected to forage on site; therefore, the collision risk is low.

The multiple observations (83) of prairie falcons throughout the four seasons of raptor counts on the proposed OWEF site suggest that this is a resident species of the Ocotillo area. The habitat in the southwest portion of the proposed OWEF site and adjacent areas to the north and west of the proposed OWEF site contain suitable nesting habitat for the species. A suspected prairie falcon nest location was noted in the I-8 Island (just south of Site 1), but the location was never definitively documented. The prairie falcons that forage within the proposed OWEF site are at a slightly greater risk of collision as compared to many of the other raptor species because their use of the site was greater (0.03 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d) and they were commonly observed flying through the RSA.

As noted in Section 3.23, three burrowing owls and one active burrow were observed during the January 2010 habitat assessment, 2 burrowing owl pairs were documented during the June/July 2010 breeding season surveys, and 20 burrowing owls were documented during the fall 2009/winter 2010 special status plant species surveys (HELIX, 2010e and 2011e). Burrowing owls were not observed migrating through the site during the 2009, 2010, or migration counts (HELIX 2010e and 2011e). The increased number of burrowing owls observed on the proposed OWEF site in fall are likely due in part to migrating owls from the northern United States other areas of Imperial County. Although they were not observed within the RSA, it is expected that the owls would fly within the RSA during migratory periods. Therefore, burrowing owl is at risk of collision with the turbines.

Potential collision risk impacts to special status raptor species would be minimized though implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Other Avian Species

Ninety-six percent of avian observations made during the avian point counts study occurred outside of the rotor swept area (RSA) range of approximately 100-450 feet above ground level (HELIX, 2010d). However, there is potential for all recorded avian species to fly within the RSA height range. Given that the proposed OWEF site is not part of a major migratory movement corridor, and the bird abundance is relatively low, overall collision risk for diurnally active avian species is low. It is likely that nocturnal species such as owls (Order Strigiformes), nightjars (Family Caprimulgidae), etc., and species that migrate at night would be at a higher risk of collision as compared to diurnally active species, as the WTGs may not be visible to the species migrating at night.

Three of the special status avian species (non-raptor species) were documented in moderate densities within the proposed OWEF site: Vaux's swifts were common during the fall and spring migratory period; Brewer's sparrow was common during the spring migratory period; and loggerhead shrike was common throughout the year. Each of these species is considered to be at risk of collision because they were commonly observed within the proposed OWEF site, and they were frequently observed flying within the RSA.

The other special status avian species (non-raptor species) observed on the proposed OWEF site were infrequently observed, including long-eared owl, brant, yellow warbler, Le Conte's thrasher, and willow flycatcher. Based on the low use of the site, each of these species is at low risk of collision with the wind turbines.

In addition, turkey vulture and red-tailed hawk, which are not considered special status, are included here because of their prevalence on the proposed OWEF site. Solitary individuals, as well as groups of turkey vultures, were observed flying through the proposed OWEF site during the fall and spring. Turkey vulture is the species with the highest risk of collision because it was the most abundant, and the majority of observations were within the RSA. Turkey vulture use within the proposed OWEF site is low, however, compared to other wind energy sites in the western United States (HELIX, 2010d). Red-tailed hawks are year-round residents of the Ocotillo area. Individuals were observed perching on the transmission line towers that cross through the proposed OWEF site and were observed foraging within the proposed OWEF site throughout the year. This species is at high risk for collision because it was commonly observed flying in the RSA.

Potential collision risk impacts to the other avian species listed above would be minimized though implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Bats

The results of the long-term echolocation station monitoring for the proposed OWEF indicate very low bat use of the proposed OWEF site, and that most of the bats on the proposed OWEF site fly at lower heights than the RSA (Rahn Conservation Consulting, 2011a). This is true for all species except the western mastiff bat, which is typically found flying at higher elevations, particularly when commuting through an area. Observations with the thermal imaging camera showed similar results. For all species of bats observed or detected, they were typically found at heights between 1 to 25 meters (approximately 3 to 82 feet) above ground level. Again, the only exception was the western mastiff bat, which was typically observed above 25 meters (approximately 82 feet, and potentially within the RSA; Rahn Conservation Consulting, 2011a).

Only the western mastiff bat is considered at risk to collide with the WTGs in the RSA. Because of its larger body size and its wing structure, the western mastiff bat is unable to drink from water sources less than 30 meters (approximately 98 feet) long. Because there are no water bodies within the proposed OWEF site that could support this species, and foraging potential is limited, this species probably only moves through the proposed OWEF site infrequently in search of suitable habitat. This species was rarely recorded during the bat surveys for the proposed OWEF (Rahn Conservation Consulting, 2011a and 2011b). Therefore, the potential for this species to collide with the WTGs in the RSA is low.

Potential collision risk impacts to bat species would be minimized though implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1aa (*Night lighting will be minimized by using directional lighting that is shielded down*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Avian Radar Survey

Although the majority of targets were above the RSZ for all seasons, the frequency of low visibility conditions during nocturnal migration could be a more important indicator of collision risk. Atmospheric conditions affect both flight direction and height of migrating passerines (Kerlinger and Moore 1989 in DeTect, 2011), and inclement weather has been identified as an important factor in avian collisions with other tall structures such as power lines, buildings, and particularly communication towers (Manville 2005 in DeTect 2011). It is thought that inclement weather such as low visibility and low cloud ceilings force migrating birds to lower altitudes, increasing their collision risk with tall structures including WTGs (Morrison 2006 in DeTect, 2011). Accordingly, avian collision risk analysis for wind farms typically focuses on time periods when low visibility occurs at night.

The level of avoidance of birds to obstacles under conditions of low visibility at night is not well understood, however, and some avoidance is likely even under these conditions. For the purpose of this survey for the proposed OWEF, low visibility potentially resulting in bird strike risk was defined as visibility less than 0.5-mile based on the National Weather Service's lowest visibility threat level for humans. Observation records from two nearby airports (El Centro Naval Air Facility [NJK] and Imperial County Airport [IPL]) showed very infrequent low visibility. During year one (Sep 15, 2010–July 9, 2011), NJK only had two records of low visibility on October 2, 2010 and three records of low visibility on January 30, 2011, totaling less than 0.1 percent of the hourly observations. The October 2010 records were associated with snow, while fog was noted during the January 2011 observations. IPL also recorded fog on January 30, 2011 as well as on December 19, 2010. The infrequent low visibility at the airports is one indicator that low visibility conditions were likely infrequent in the area during all seasons. However, both airports are greater than 20 miles east of the proposed OWEF site and may have different climatic influences. For example, both airports are in the heart of the Imperial Valley, while the proposed OWEF site is in the desert at the foot of mountain topography.

Potential collision risk impacts to special status targets would be minimized though implementation of Mitigation Measures Wild-1o/Wild-1ff (*Implement an Eagle Conservation Plan*), Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Avian Electrocution Risk

Overhead transmission lines also pose an electrocution risk for avian species, particularly for large, aerial perching birds, such as hawks and eagles, because of their large size, distribution, and behavior (APLIC, 2006). Because raptors and other large aerial perching birds often perch on tall structures that offer views of potential prey, the design of transmission poles or towers appears to be a major factor in raptor electrocution (APLIC, 2006). Electrocution occurs when a perching bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. Electrocution can occur when horizontal separation is less than the wrist-to-wrist (flesh-to-flesh) distance of a bird's wingspan or where vertical separation is less than a bird's length from head-to-foot (APLIC, 2006). Electrocution can also occur when birds perched side-by-side span the distance between these elements (APLIC, 2006). Potential impacts associated with electrocution would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1cc (*Design transmission towers and lines to conform with Avian Power Line Interaction Committee standards*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

American Badger

As described for burrowing owl above, O&M, such as vegetation management or regrading access roads that result in disturbance beyond the approved permanent footprint, have the potential to injure or kill American badgers by crushing them in their dens or crushing den entrances with O&M equipment, which would prevent badgers from escaping. These potential impacts to American badgers during O&M would be mitigated by the requirement to conduct a pre-construction survey for the species in accordance with Mitigation Measure Wild-2c if O&M activities have the potential to disturb habitat outside of the approved permanent project footprint. To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes actions and reporting procedures to be used if American badger are encountered and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP.

Peninsular Bighorn Sheep

As with construction, O&M activities have the potential to directly impact PBS through impacts to USFWS Essential Habitat, mortality of PBS as a result of collision with construction equipment, elimination of access to foraging areas, disruption of reproduction or lambing activities, prevention of dispersal or intermountain movements.

As described for burrowing owl above, certain O&M activities (e.g., vegetation management or regrading access roads) could result in disturbance beyond the approved permanent footprint. Impacts to USFWS Essential Habitat would occur if those additional ground disturbance activities occur in USFWS Essential Habitat. Potential impacts to USFWS Essential Habitat would be minimized by implementation of Mitigation Measures PBS monitoring (Mitigation Measure Wild-1gg) in accordance with a Bighorn Sheep Mitigation and Monitoring Plan (Mitigation Measure Wild-1s) and annual status reports on the PBS (Mitigation Measure Wild-1hh). Any disturbance to USFWS Essential Habitat beyond the approved project footprint would need to be mitigated in accordance with Mitigation Measures Wild-1q and Wild-1r. To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes measures to reduce potential effects on PBS and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP.

As with construction, vehicle traffic on access roads have the potential to result in direct impacts to PBS through collision with construction vehicles and equipment. The potential effect of colliding with vehicles during O&M would be mitigated through implementation of Mitigation Measures Wild-1c/Wild-1x (*Implement and document compliance with Worker Education Awareness Program*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1gg (*Monitor O&M activities in accordance with the Bighorn Sheep Mitigation and Monitoring Plan, including implementing a 1,000-foot buffer if PBS are observed on site*), and Wild-1hh (*Provide annual PBS status reports*).

O&M activities would not eliminate access to foraging areas because the OWEF site would not be fenced[2].

As discussed under construction, the proposed OWEF does not include WTGs, access roads, or other features in steep, rocky areas that are reproduction/lambing areas. Noise and activity during O&M activities could affect PBS, however, if the activities result in disturbance to reproduction/lambing areas during the lambing period (January through June). Approximately 8 WTGs are proposed within 3,900 feet of known lambing sites in the I-8 Island. To avoid impacts to the lambing sites, major maintenance activities (e.g., major turbine component replacement or grading—not turbine operation or regular maintenance inspections) of WTGs within 3,900 feet of PBS lambing sites will be avoided, as necessary, from January 1 through June 30, in accordance with Mitigation Measure Wild-1gg.

---

[2] The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

Noise from O&M activities is not expected to affect PBS reproduction or lambing activities because of the high existing noise levels from traffic on I-8. HELIX collected preliminary noise measures within the I-8 Island in March 2011 to determine the ambient noise levels from vehicle traffic. Ambient noise levels in the habitat directly adjacent to the westbound lanes of I-8 ranged from 60-80 dB(A). Ambient noise levels further from the westbound lanes of I-8 averaged between 50-55 dB(A). O&M activities are not expected to result in increases in noise levels at the known PBS lambing sites for three primary reasons: (1) major O&M activities within 3,900 feet of lambing sites would only be allowed to occur between January and June in accordance with Mitigation Measure Wild-1gg; (2) all other O&M activities would be at least 3,900 feet from the known lambing areas, and the noise would dissipate across the landscape; and (3) lambing areas are typically located in rugged, secure locations on rocky hillsides to allow ewes to keep lambs protected.

The use of night lighting during O&M Activities has the potential to disrupt PBS behaviors if PBS are bedding in the vicinity of the night lighting. The following mitigation measure will be implemented Wild-1aa (*Minimize night lighting during O&M*),

O&M is not anticipated to affect PBS intermountain movement for the same reasons that construction is not anticipated to affect intermountain movement.

As with construction, O&M activities have the potential to indirectly impact PBS if activities result in behavioral responses due to noise, and human activities, or if activities result in habitat degradation primarily due to the introduction or spread of invasive weed species. Behavioral responses may also occur as a result of the operating wind farm.

Once the proposed OWEF is constructed, human activity is expected to be similar to pre-project conditions. The proposed OWEF site contains a number of established BLM roads that are used by OHV recreationists year-round, and probably most particularly when the temperatures are cooler (i.e., during the lambing season when PBS would be most likely to venture into the area to forage). These roads are also used by U.S. Border Patrol year-round. Therefore, O&M activities are not expected to have any more effect from vehicular use and human activity than what already occurs in the area. Noise from O&M activities has the potential to disrupt PBS foraging and resting behaviors because PBS tend to avoid areas where disturbance is occurring, as described in the indirect effects to PBS from construction activities. To minimize potential PBS behavioral responses as a result of human activity, noise, and night lighting, the following mitigation measures will be implemented: Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1aa (*Minimize night lighting during O&M*), Wild-1gg (*Monitor O&M activities in accordance with the Bighorn Sheep Mitigation and Monitoring Plan, including implementing a 1,000-foot buffer if PBS are observed on site*), and Wild-1hh (*Provide annual PBS status reports*).

Development and the associated increases in human activities adjacent to and within occupied PBS habitat have the potential to adversely affect PBS by fragmenting PBS use areas. Occupied PBS habitat occurs to the south, west, and north of the proposed OWEF (i.e., the I-8 Island, Carrizo Gorge, and the Coyote Mountains); however, the footprint of the proposed OWEF is located within suitable but currently unoccupied PBS habitat. Post-construction human activity levels on the proposed OWEF site adjacent to PBS-occupied habitat are expected to be similar to pre-construction levels. Therefore, no additional habitat fragmentation of currently occupied PBS habitat would occur as a result of the proposed OWEF.

It is not known how PBS would respond when the WTG blades are operating because behavioral studies in response to wind development sites have not been conducted, and no published studies of PBS use of wind energy project sites are available. Some studies suggest, however, that once the primary disturbance (i.e., construction and human presence) is removed, that ungulates (hoofed animals) will acclimate to remaining infrastructure (Walter et al., 2006). A study by Leslie and Douglas (1980, as cited in Walter et al., 2006) indicated that desert bighorn sheep continued to access water sources in close proximity to a water pumping facility during construction even though alternative watering sources were provided further from construction. Potential impacts to PBS as a result of the operating wind farm would be minimized through the implementation of Mitigation Measures Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1hh (*Provide annual PBS status reports*), Wild-1ii (*Participate in coordination effort with BLM for the design and construction of a wildlife overpass across I-8*), and Wild-2e (*Collect data on PBS movements during the first 3 years of operation*).

As with construction, introduction or spread of invasive plant species during O&M would be an indirect impact to PBS. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Decommissioning

Decommissioning and reclamation activities associated with the proposed OWEF would result in direct temporary and permanent losses of wildlife species habitats and indirect effects on habitats and species. These activities would include such tasks as vegetation removal, grading, and surface disturbance to remove the WTGs, above-ground electrical components, and substation components, as well as to remove below-ground infrastructure to a depth of 3 feet. They also include surface disturbance to remove roads and to restore vegetation. It is expected that the impacts during decommissioning would be similar to those of construction of the proposed OWEF.

All mitigation measures that are required during construction of the proposed OWEF to avoid or minimize impacts to wildlife resources would also be required during decommissioning and reclamation activities (see section 4.21.9).

4.21.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the proposed OWEF (construction, O&M, decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.21.2. Only those significance criteria, which were determined in Section 4.21.2 to be relevant to the proposed OWEF, are addressed below.

Construction

FTHL

- **Wild-1.** Proposed OWEF construction may result in the direct mortality, injury, or harassment of FTHLs. These would be significant impacts.
- **Wild-1.** The proposed OWEF's impacts to 132.3 acres of FTHL-occupied habitat would be a significant impact.

- **Wild-1.** The proposed OWEF would result in significant indirect impacts to FTHL during construction due to night lighting.
- **Wild-1.** The proposed OWEF would have a significant indirect impact to FTHL if construction activities result in an increase in avian and non-avian predators that prey on FTHL.
- **Wild-1.** The proposed OWEF would significantly impact FTHL if invasive weeds are introduced into FTHL-occupied habitat because it would degrade FTHL habitat.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- **Wild-1.**
- Proposed OWEF construction activities have the potential to significantly impact the rosy boa and red-diamond rattlesnake by direct crushing of individuals during vegetation clearing and grading and removal of habitat.
- **Wild-1.** Proposed OWEF construction activities have the potential to result in significantly indirect impacts to rosy boa and red-diamond rattlesnake through noise, vibration, night lighting, invasive weed species, and fugitive dust.

Burrowing Owl

- **Wild-1 and Wild-2.** The proposed OWEF would result in a significant impact to burrowing owl during construction due to 1 burrow being directly impacted during construction and 2 other burrows considered directly impacted because they occur within 160 feet of the Proposed Action.
- **Wild-1.** The proposed OWEF would significantly impact 19.5 acres of foraging habitat within 300 feet of occupied burrows.
- **Wild-1.** Proposed OWEF construction activities have the potential to result in significantly indirect impacts to burrowing owl through night lighting, construction noise, and degradation of foraging habitat.

Golden Eagle

- **Wild-1.** Construction of the proposed OWEF would result in temporary and permanent impacts to approximately 654.6 acres of vegetation. These impacts would not be considered significant because the impacts are not anticipated to have a substantial adverse affect on golden eagle foraging given the amount of foraging habitat that would remain available to the species on and adjacent to the OWEF site.
- **Wild-1.** Proposed OWEF construction activities have the potential to result in degradation of golden eagle foraging habitat through introduction or spread of invasive weed species, which would be considered a significant indirect impact.

Nesting Birds

- **Wild-1.** The proposed OWEF would result in a significant impact to special status bird species if construction causes destruction or abandonment of active nests or the mortality of adults, young, or eggs.

- **Wild-1.** The proposed OWEF would result in a significant indirect impact to special status bird species if construction causes a loss of reproductive potential resulting from night lighting and construction noise.

Bats

- **Wild-1.** The use of night lighting during construction would not result in a significant impact to special status bat species because it is not expected to adversely affect foraging behaviors.

American Badger

- **Wild-1** and **Wild-2.** The proposed OWEF would result in significant impacts to American badgers if individuals and/or dens are crushed during construction activities.

PBS

- **Wild-1.** The proposed OWEF would have a significant direct impact to 167.2 acres of USFWS Essential Habitat for PBS, including temporary impacts to 124.1 acres and permanent impacts to 43.1 acres.
- **Wild-1.** The proposed OWEF would have a significant impact to PBS if construction equipment collides with PBS causing injury or death.
- **Wild-1.** The proposed OWEF would have a significant indirect impact to PBS habitat if construction activities result in the introduction or spread of invasive weed species into PBS foraging habitat.
- **Wild-1.** Human activity, noise, and use of night lighting during construction would have a significant indirect impact on PBS because they would have an adverse effect on PBS behavioral responses.
- **Wild-2.** The proposed OWEF would have a significant impact on PBS if construction activities result in PBS avoiding suitable foraging habitat due to noise, human activity, and/or equipment disturbance.
- **Wild-2.** The proposed OWEF would have a significant impact on PBS if construction activities occur within 3,900 feet of reproduction/lambing areas during the PBS lambing period (January through June).
- **Wild-2.** Construction of the proposed OWEF would not have a significant impact on PBS intermountain movements because the known movement areas do not occur on or directly adjacent to the OWEF site, the OWEF was redesigned to move features further from Devil's Canyon, and the OWEF site will not be fenced[3].

---

[3] The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

Operation and Maintenance

FTHL

- **Wild-1.** General O&M activities, re-grading of access roads, weed abatement activities, and emergency maintenance activities in occupied FTHL habitat may result in direct mortality or injury to individual FTHL. These would be significant impacts.
- **Wild-1.** The proposed OWEF would have a significant impact on FTHL habitat if O&M activities (including emergency maintenance) occur beyond the approved project footprint within occupied FTHL habitat.
- **Wild-1.** A potential increase in avian and non-avian predators associated with proposed OWEF O&M may directly affect FTHL through mortality. This would be a significant impact.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on FTHL if invasive weed species are introduced or spread or if night lighting is used in occupied FTHL habitat during O&M activities.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- **Wild-1.** O&M activities have the potential to significantly impact rosy boa and red-diamond rattlesnake through crushing of individuals resulting from vegetation management or road grading.
- **Wild-1.** O&M activities have the potential to result in significant indirect impacts to the species as a result of noise, vibration, night lighting, introduction or spread of invasive weed species, and fugitive dust.

Burrowing Owl

- **Wild-1** and **Wild-2.** O&M activities associated with the proposed OWEF have the potential to significantly impact burrowing owls if they cause destruction of burrows or burrow entrances.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on burrowing owl if invasive weed species are introduced or spread or if night lighting is used during O&M activities.

Nesting Birds

- **Wild-1.** O&M activities associated with the proposed OWEF could result in significant impacts to special status nesting bird species resulting from destruction or abandonment of active nests or mortality of adults, young, or eggs.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on special status nesting bird species if invasive weed species are introduced or spread or if night lighting is used during O&M activities.

Avian and Bat Collision Risk

- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact golden eagles as a result of collision with the WTGs.
- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact special status raptor species (Cooper's hawk, sharp-shinned hawk, ferruginous hawk, Swainson's hawk, northern

harrier, merlin, osprey, peregrine falcon, prairie falcon, and burrowing owl) as a result of collision with the WTGs.

- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact special status avian species (Vaux's swift, Brewer's sparrow, loggerhead shrike, long-eared owl, brant, yellow warbler, Le Conte's thrasher, and willow flycatcher) as a result of collision with the WTGs.
- **Wild-1.** Operation of the proposed OWEF, including use of night lighting at the O&M building and WTGs, has the potential to significantly impact special status bat species (western mastiff bat) as a result of collision with the WTGs.

Avian Electrocution Risk

- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact special status raptor species as a result of electrocution with transmission lines and electrical components associated with the transmission lines.

American Badger

- **Wild-1.** O&M associated with the proposed OWEF has the potential to significantly impact the American badger by injuring or killing it by crushing it in its den or by crushing den entrances.

PBS

- **Wild-1.** The proposed OWEF would have a significant impact on USFWS Essential Habitat for PBS if O&M activities (including emergency maintenance) occur beyond the approved project footprint.
- **Wild-1.** The proposed OWEF would have a significant impact to PBS if O&M equipment collides with PBS causing injury or death.
- **Wild-1.** The proposed OWEF would have a significant impact on PBS foraging if O&M activities occur within 1,000 feet of PBS.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on PBS if O&M activities result in behavioral changes due to noise, human activity, night lighting, and the operating wind turbines.
- **Wild-1.** The proposed OWEF would have a significant indirect impact to PBS habitat if O&M activities result in the introduction of new invasive weed species or result in the spread existing invasive weed species into potential PBS foraging habitat.
- **Wild-2.** The proposed OWEF would have a significant impact on PBS if O&M activities occur within 3,900 feet of reproduction/lambing areas during the PBS lambing period (January through June).

- **Wild-2.** Proposed OWEF O&M would not have a significant impact on PBS intermountain movements because the known movement areas do not occur on or directly adjacent to the OWEF site and the OWEF site will not be fenced[4].

Decommissioning

- **Wild-1.** Decommissioning and reclamation activities associated with the Proposed OWEF would result in significant direct temporary and permanent losses of wildlife species habitats and indirect effects on habitats and species similar to those from construction.

4.21.4 Alternative 2: 137 Wind Turbine Generators

4.21.4.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts included below covers construction, O&M, and decommissioning of Alternative 2. The discussion only includes where Alternative 2 differs from Alternative 1: Proposed Action.

Construction

Flat-Tailed Horned Lizard

Impacts to FTHL for this alternative would be reduced as compared to Alternative 1 because Alternative 2 would eliminate 5 WTGs in occupied FTHL habitat. Alternative 2 would eliminate WTGs 158, 165, 166, 170, and 171 (and their associated access roads and underground collection systems) in occupied FTHL habitat. Alternative 2 would permanently impact approximately 22.8 acres of FTHL-occupied habitat and would temporarily impact approximately 100.5 acres of FTHL-occupied habitat. All other direct and indirect impacts to FTHL associated with this alternative 2 would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2.

Barefoot Banded Gecko

The barefoot banded gecko was not detected and is assumed to be absent within the 2010 and 2011 survey areas (Dugan, 2011a and 2011b). Therefore, no impacts would occur to the barefoot banded gecko; no mitigation measures would be required; and a 2081 Incidental Take Permit would not be required unless the species is observed during preconstruction surveys for other species.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

The construction impacts of Alternative 2 on red-diamond rattlesnake and rosy boa would be less than the impacts described for Alternative 1 because the reduced construction area in suitable habitat for these species.

---

[4] The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

Burrowing Owl

The construction impacts of this alternative on burrowing owl would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 2. As with Alternative 1, this alternative would directly impact 3 occupied burrows and 19.5 acres of foraging habitat, but there would be fewer project features with owl foraging areas.

Golden Eagle

Impacts to golden eagle foraging habitat for this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2. Construction of Alternative 2 would result in temporary and permanent impacts to approximately 615.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Potential indirect impacts to golden eagle foraging habitat as a result of the introduction or spread of invasive weed species associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2.

Nesting Birds

The construction impacts of this alternative on nesting bird species would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 2.

Bats

Effects are anticipated to be the same as for Alternative 1: Proposed Action.

American Badger

The construction impacts of this alternative on American badger would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 2.

Peninsular Bighorn Sheep

Impacts to PBS for this alternative would be reduced as compared to Alternative 1 because Alternative 2 would eliminate 4 WTGs in USFWS Essential Habitat. Alternative 2 would eliminate WTGs 120, 121, 122, and 123 (and their associated access roads and underground collection systems) within USFWS Essential Habitat. Alternative 2 would directly impact 159.4 acres of USFWS Essential Habitat for PBS, including temporary impacts to 117.9 acres and permanent impacts to 41.5 acres. All other direct and indirect impacts to PBS associated with this Alternative 2 would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2.

Operation and Maintenance

O&M effects of this alternative on FTHL, barefoot banded gecko, special status snake species, burrowing owl, nesting birds, bats, American badger, and PBS would be less than the impacts described for Alternative 1 because of the smaller project size and fewer WTGs associated with Alternative 2. Avian and bat collision risk associated with this alternative would be less than the impacts described for Alternative 1 because of the fewer WTGs associated with Alternative 2. Electrocution risk associated with Alternative 2 would be the same as the risk described for Alternative 1 because the transmission line requirements are the same for each alternative.

Decommissioning

Effects would be the same as for Alternative 1: Proposed Action.

4.21.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 2 (construction, O&M, decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.21.2. Only those significance criteria, which were determined in Section 4.21.2 to be relevant to Alternative 2, are addressed below, and only those that differ from Alternative 1: Proposed Action are included.

Construction

FTHL

- **Wild-1.** Alternative 2 would significantly and permanently impact approximately 22.8 acres of FTHL-occupied habitat and would significantly and temporarily impact approximately 100.5 acres of FTHL-occupied habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Burrowing Owl

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Golden Eagle

- **Wild 1.** Construction of Alternative 2 would result in significant temporary and permanent impacts to approximately 615.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Nesting Birds

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Bats

- Significance conclusions are the same as for Alternative 1: Proposed Action.

American Badger

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Peninsular Bighorn Sheep

- Alternative 2 would significantly and directly impact 159.4 acres of USFWS Essential Habitat for PBS, including significant temporary impacts to 117.9 acres and significant permanent impacts to 41.5 acres. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Operation and Maintenance

Significance conclusions for O&M associated with Alternative 2 are the same as for Alternative 1: Proposed Action.

Decommissioning

Significance conclusions for decommissioning activities associated with Alternative 2 are the same as for Alternative 1: Proposed Action.

4.21.5 Alternative 3: 105 Wind Turbine Generators

4.21.5.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts covers construction, O&M, and decommissioning of the Alternative 3. The discussion only includes where Alternative 3 differs from Alternative 1: Proposed Action.

Construction

Flat-Tailed Horned Lizard

Impacts to FTHL for this alternative would be reduced as compared to Alternative 1 because Alternative 3 would eliminate 22 of the 33 WTGs in occupied FTHL habitat. Alternative 2 would eliminate WTGs 76, 152-168, 170-172, and 175 (and their associated access roads and underground collection systems) in occupied FTHL habitat. Alternative 3 would permanently impact approximately 8.3 acres of FTHL-occupied habitat and would temporarily impact approximately 41.0 acres of FTHL-occupied habitat. All other direct and indirect impacts to FTHL associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3.

Barefoot Banded Gecko

Alternative 3 would not include any project features in barefoot banded gecko habitat. Therefore, no impacts to the species would occur with this alternative.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

The construction impacts of Alternative 3 on rosy boa and red-diamond rattlesnake would be less than the impacts described for Alternative 1 because the reduced construction area in suitable habitat for these species.

Burrowing Owl

The construction impacts of this alternative on burrowing owl would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 3. As with Alternative 1, this alternative would directly impact 3 occupied burrows and 19.5 acres of foraging habitat, but there would be fewer project features with owl foraging areas.

Golden Eagle

Impacts to golden eagle foraging habitat for this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3. Construction of Alternative 3 would result in temporary and permanent impacts to approximately 494.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Potential indirect impacts to golden eagle foraging habitat as a result of the introduction or spread of invasive weed species associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3.

Nesting Birds

The construction impacts of this alternative on nesting bird species would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 3.

Bats

Effects are anticipated to be the same as for Alternative 1: Proposed Action.

American Badger

The construction impacts of this alternative on American badger would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 3.

Peninsular Bighorn Sheep

Impacts to PBS for this alternative would be reduced as compared to Alternative 1 because Alternative 3 would eliminate 7 WTGs in USFWS Essential Habitat. Alternative 3 would eliminate WTGs 118-124 (and their associated access roads and underground collection systems) within USFWS Essential Habitat. The underground collection line between Sites 1 and 2, which crosses through USFWS Essential Habitat, would also be eliminated with Alternative 3 because Site 2 is eliminated from this alternative. Alternative 3 would directly impact 151.6 acres of USFWS Essential Habitat for PBS, including temporary impacts to 111.6 acres and permanent impacts to 40.0 acres. All other direct and indirect impacts to PBS associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3.

Operation and Maintenance

O&M effects of this alternative on FTHL, special status snake species, burrowing owl, nesting birds, bats, American badger, and PBS would be less than the impacts described for Alternative 1 because of the smaller project size and fewer WTGs associated with Alternative 3. Avian and bat collision risk associated with this alternative would be less than the impacts described for Alternative 1 because of the fewer WTGs associated with Alternative 3. Electrocution risk associated with Alternative 3 would be the same as the risk described for Alternative 1 because the transmission line requirements are the same for each alternative.

Decommissioning

Effects would be the same as for Alternative 1: Proposed Action.

4.21.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 3 (construction, O&M, decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.21.2. Only those significance criteria, which were determined in Section 4.21.2 to be relevant to Alternative 3, are addressed below, and only those that differ from Alternative 1: Proposed Action are included.

Construction

FTHL

- **Wild-1.** Alternative 3 would significantly and permanently impact approximately 8.3 acre of FTHL-occupied habitat and would significantly and temporarily impact approximately 41.0 acres of FTHL-occupied habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Burrowing Owl

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Golden Eagle

- **Wild 1.** Construction of Alternative 3 would result in significant temporary and permanent impacts to approximately 494.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Nesting Birds

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Bats

- Significance conclusions are the same as for Alternative 1: Proposed Action.

American Badger

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Peninsular Bighorn Sheep

- Alternative 3 would significantly and directly impact 151.6 acres of USFWS Essential Habitat for PBS, including significant temporary impacts to 111.6 acres and significant permanent impacts to 40.0 acres. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Operation and Maintenance

Significance conclusions for O&M associated with Alternative 3 are the same as for Alternative 1: Proposed Action.

Decommissioning

Significance conclusions for decommissioning activities associated with Alternative 3 are the same as for Alternative 1: Proposed Action.

4.21.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.21.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) no action would occur, and existing conditions relevant to biological resources would continue but may be altered at some point in the future by construction of a different wind energy development or another potential project consistent with BLM's California Desert Conservation Area plan. No impacts associated with the proposed OWEF would occur.

4.21.6.2 CEQA Significance Determinations

Alternative 4 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.21.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.21.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to biological resources would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur.

4.21.7.2 CEQA Significance Determinations

Alternative 5 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.21.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.21.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, similar impacts to biological resources as those described for the proposed OWEF could occur.

4.21.8.2 CEQA Significance Determinations

Alternative 6 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.21.9 Cumulative Impacts

4.21.9.1 Geographic Extent/Context

The geographic scope for the analysis of cumulative impacts related to biological resources includes the vicinity of all reasonably foreseeable cumulative projects and extends generally throughout western Imperial County and southeast San Diego County, as shown in Figures 4.1-1a and 4.1-1b. The proposed OWEF is located within or adjacent to federal, state, and county lands that are largely undeveloped and support native vegetation communities that provide habitat for wildlife species. The following are areas of biological significance that have potential to be affected by the proposed OWEF and/or the cumulative projects considered herein and the wildlife resources present within them:

- California Desert Conservation Area
- BLM Limited Use and Controlled Use Lands
- ABDSP
- Peninsular Bighorn Sheep Habitat
- Flat-Tailed Horned Lizard Habitat

The specific geographic extent for the analysis of cumulative impacts to special status wildlife resources is as follows and is shown in Figure 4.21-4.

- FTHL—Western Population (west of the Salton Sea, Imperial Valley, and Mexicali Valley; USFWS 2011c)
- Barefoot banded gecko – the extent of its habitat in the U.S. (i.e., eastern San Diego County, western Imperial County along eastern Peninsular Ranges)
- PBS—Essential Habitat in the Coyote, In-Ko-Pah, and Jacumba mountains as well as the desert floor to 10 miles east of the proposed OWEF and south to the Mexico border
- Burrowing owl—the population of burrowing owls in western Imperial County (including the lands west of the Salton Sea and the Imperial Valley)
- Golden eagle and other wide-ranging, special status species—10-mile radius around the proposed OWEF

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resources being evaluated. The geographic scope of this analysis is based on the nature of the geography surrounding the proposed OWEF and the characteristics of each wildlife resource. In addition, each cumulative project will have its own implementation schedule, which may or may not coincide or overlap with the proposed OWEF's schedule. This is a consideration for short-term impacts from the proposed OWEF. However, to be conservative (most particularly for the PBS because the potential effects on its behavior are not predictable), the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the proposed OWEF.

A cumulative impact to special status wildlife resources would occur if the proposed OWEF, combined with the reasonably foreseeable cumulative projects in the vicinity of each resource being evaluated, would result in a beneficial or adverse impact to the resource. For example, a cumulative impact could include (1) special status wildlife resources becoming limited in extent within the cumulative analysis area, (2) special status wildlife resources becoming limited in their population sizes within the cumulative analysis area, or (3) compensation for those impacts not being achieved.

4.21.9.2 Existing Cumulative Conditions

Urbanization, population growth, and continuing development pressure in Imperial and San Diego counties have brought about substantial changes to, and effects on, natural resources. Consequently, modification, alteration, and/or destruction of vegetation communities and the proliferation of invasive weeds are occurring throughout the region, which affect the wildlife species that live in and migrate through those vegetation communities. Future growth and development in the analysis area will likely continue these impacts.

Vegetation communities are largely similar in the analysis area and consist primarily of a variety of desert scrubs at lower elevations (except in the Imperial valley where agriculture is dominant) and desert transitional habitats (such as semi-desert chaparral and Peninsular juniper woodlands) as well as chaparrals, montane scrubs, oak woodlands, and grasslands at higher elevations (such as in Jacumba, Boulevard, and McCain Valley, San Diego County). These communities support many invertebrate and vertebrate wildlife species including amphibians, reptiles, birds, and mammals. Many of these species are federal or state listed or considered to be special status (see Section 3.23.1.1). The most sensitive of species observed on the proposed OWEF site that also occur elsewhere in the analysis area are the FTHL, golden eagle, Swainson's hawk, and PBS. Barefoot banded gecko was not observed on the proposed OWEF site but is known to occur to the south and west of the proposed OWEF site, within the I-8 Island, and to the west of the proposed OWEF site in ABDSP.

4.21.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the counties' jurisdictions, and other actions/activities that Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR for the geographic areas described in Section 4.21.9.1. The projects that are located within the geographic area of effect for cumulative impacts are presented in Table 4.1-2 and listed below:

- ESJ Wind Project I
- Imperial Valley Solar – Solar Two
- Coyote Wells Specific Plan
- Ketchum Ranch
- Elder – TPM 20981
- Grizzle – TPM 20719
- Pacific Bell Cell Site
- Sunrise Powerlink
- SDG&E Proposed Photovoltaic Solar Field
- Renewergy, LLC
- Imperial Solar Energy Center – South
- Imperial Solar Energy Center – West
- Pacific Wind Development, LLC, Tule Wind Energy Project (TWEP)
- Superstition Solar 1 (Superstition Sunpeak)

Of particular note, the Sunrise Powerlink project, a new 500-kV transmission line, will traverse northeast-southwest through the proposed OWEF site resulting in impacts to wildlife and wildlife habitats in addition to those that would be caused by the proposed OWEF.

Also of particular note are development projects proposed on large tracts of land, which have the potential to reduce or eliminate large areas of wildlife habitat. Large-scale development projects in the vicinity of the proposed OWEF site include several large proposed solar developments (e.g., the Imperial Valley

Solar-Solar Two project, which would impact 5,130 acres of wildlife habitat and the Superstition Solar 1, which could impact up to 5,516 acres of wildlife habitat; Table 4.21-1). Many of the cumulative projects listed in Table 4.21-1 would result in impacts to the same wildlife species and wildlife habitats that occur on the proposed OWEF site.

4.21.9.4 Construction, O&M, and Decommissioning

Direct impacts to wildlife as a result of the proposed OWEF includes temporary and permanent loss of habitat along with the displacement and/or potential mortality of wildlife species that are poor dispersers such as snakes, lizards, and small mammals. Similarly, the list of cumulative projects implemented in undeveloped areas would have the potential to result in similar impacts. However, the combined effect of impacts to non-special status wildlife species from the proposed OWEF and impacts of the cumulative projects is considered limited because these species are common and wide-ranging within the region. The current and reasonably foreseeable projects within the cumulative impacts analysis area would impact many of same listed and special status wildlife species as the proposed OWEF such as FTHL, burrowing owl, golden eagle, Cooper's hawk, sharp-shinned hawk, prairie falcon, northern harrier, osprey, Vaux's swift, long-eared owl, loggerhead shrike, yellow warbler, LeConte's thrasher, nesting birds, American badger, and PBS (Table 4.21-1). Impacts to these species would be the result of direct loss of suitable habitat, direct loss of individuals, or indirect effects due to human disturbance or changes in habitat quality during construction, O&M, and decommissioning. Only the species common among the cumulative projects and the proposed OWEF are included in Table 4.21-1.

FTHL

Direct and indirect impacts to FTHL associated with the proposed OWEF combined with impacts associated with past, present, and future projects (as shown in Table 4.21-1) are considered a cumulative impact because they would limit the extent and potentially the size of the Western Population of the FTHL. For this reason, the cumulative impact would be considered significant under CEQA.

Using a GIS-based assessment to estimate the area of this portion of the current distribution as defined by the Rangewide Management Strategy (FTHL ICC, 2003), the USFWS estimated that the Western Population occupies 845,073 acres. Of this acreage, approximately 625,226 acres is within the U.S. Within the U.S. portion of the Western Population, approximately 119,258 acres, or about 19 percent, is non-federal or non-state owned, or is more likely to be developed (USFWS, 2011c). The proposed OWEF and the current and reasonably foreseeable projects could impact up to approximately 7,500 acres of potential FTHL habitat (primarily desert scrubs). Impacts to FTHL habitat associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact to FTHL because these combined impacts have a potential to reduce the extent and population size of the species within the cumulative impacts analysis area. For this reason, the cumulative impact to FTHL would be considered significant under CEQA. The magnitude of the cumulative impact to FTHL habitat is small given that there are 625,226 acres within the cumulative impacts analysis area. The proposed OWEF's permanent impacts to 24 acres of FTHL habitat amounts to less than 0.01 percent of the habitat of the Western Population in the U.S. Still, mitigation is required for impacts to the FTHL and its habitat (for the proposed OWEF, Mitigation Measures Wild-1b, Wild-1c, Wild-1f, Wild-1g, Wild-1h, among others) to minimize impacts to the species. Implementation of these mitigation measures for the proposed OWEF would render the proposed OWEF's contribution to the cumulative impact less than significant under CEQA.

Table 4.21-1. Estimated Impacts*

Project	Listed Wildlife Species	Critical Habitat, Essential Habitat, (acres) or Movement Corridor	Non-Listed, Special Status Species	Wildlife Species Habitats (Native Vegetation)
Proposed OWEF	Barefoot banded gecko Swainson's hawk Willow flycatcher Peninsular bighorn sheep	Barefoot banded gecko is absent from the proposed OWEF site; no impacts would occur to this species from the proposed OWEF. 71 Swainson's hawks observed migrating through OWEF site over 4 seasons of surveys. No suitable nesting habitat occurs on site. 1 willow flycatcher was observed migrating through the site. No suitable breeding habitat for the species occurs on site. PBS Essential Habitat: 167 ac PBS movement not expected to be affected	Flat-tailed horned lizard habitat – permanent impacts to 24 acres and temporary impacts to 108 acres Burrowing owl – impacts to 4 occupied burrows and 26 acres of foraging habitat Golden eagle – permanent removal of 155.5 acres of foraging habitat (no impacts to nest locations would occur) Potential for collision/electrocution: variety of special status raptor and avian species, as well as western mastiff bat	Desert Scrubs: 633 ac Desert Woodland: 12 ac Badlands/Mudhills: 0.8 ac **TOTAL: 646 ac**
Coyote Wells Specific Plan	None	None	Flat-tailed horned lizard	Mesquite Hummock : 3 ac **TOTAL: 3 ac**
Imperial Solar Energy Center-South	None	None	Flat-tailed horned lizard habitat - permanent impacts to 3 acres and temporary impacts to 7 acres Burrowing owl – up to 6 burrows and unspecified amount of habitat would be impacted.	Desert Scrubs: 26 ac Desert Wash: 2 ac **TOTAL: 28 ac**
Imperial Solar Energy Center-West	None	None	Flat-tailed horned lizard habitat - permanent impacts to 1,065 acres and temporary impacts to 7 acres Burrowing owl - up to 6 burrows and unspecified amount of habitat would be impacted	Desert Scrubs: 14 ac Desert Wash: 7 ac Mesquite Thicket – 6 ac Tamarisk Thicket – 7 ac Abandoned Agriculture – 1,052 ac **TOTAL: 1,086 ac**
Imperial Valley Solar-Solar Two	Peninsular bighorn sheep	None Project site would be fenced, which was considered a loss of 6,465 acres of foraging habitat PBS movement not expected to be affected	Flat-tailed horned lizard – up to 6,156 acres of impacts Burrowing owl – up to 9 burrows and unspecified amount of habitat would be impacted	Desert Scrubs: 5,130 ac **TOTAL: 5,130 ac**

Table 4.21-1. Estimated Impacts*

Project	Listed Wildlife Species	Critical Habitat, Essential Habitat, (acres) or Movement Corridor	Non-Listed, Special Status Species	Wildlife Species Habitats (Native Vegetation)
Sunrise Powerlink	Barefoot banded gecko Peninsular bighorn sheep	Barefoot banded gecko habitat - permanent impacts to 11 acres and temporary impacts to 5 acres PBS Critical Habitat: 7 ac PBS Occupied Habitat: 31 ac Potential to affect PBS movement	Flat-tailed horned lizard - permanent impacts to 35.9 acres and temporary impacts to 131.8 acres 4 golden eagle nest sites impacted along the project route (none occur in the 10-mile radius for the OWEF site) Potential for collision/electrocution: variety of special status raptor, avian species, and bat species	Desert Scrubs: 178 ac Chaparrals: 405 ac Coastal/Montane Scrubs: 94 ac Grasslands/Meadows: 52 ac Riparian Forests/Woodlands: 0.35 ac Woodlands/Forests: 8 ac Unvegetated Channel: 3 ac **TOTAL: 740 ac**
Energía Sierra Juarez Transmission Line	Peninsular bighorn sheep	None	Potential for collision/electrocution: variety of special status raptor, avian species, and bat species	Desert Scrub: 6 ac Desert Woodland/Scrub: 3 ac **TOTAL: 9 ac**
Tule Wind Project and ECO Substation	None in common with the Proposed OWEF	None	1 golden eagle nest site impacted along the project; 5 other active territories within 10 miles (none occur within the 10-mile radius for the OWEF site) Potential for collision/electrocution: variety of special status raptor, avian species, and bat species	Desert Scrubs: 145 ac Desert Woodland/Scrub: 98 ac Chaparrals: 569 ac Montane Scrubs: 22 ac Grassland: 5 ac Riparian Scrubs: 0.4 ac Woodlands: 2 ac Unvegetated Channel: 0.6 ac **TOTAL: 842 ac**
Superstition Solar 1 (Superstition Sunpeak)	Not available	Not available	Appears to be within current distribution of the Western Population of the flat-tailed horned lizard (FTHL ICC, 2003; USFWS, 2011c)	**TOTAL 5,516 ac**

* Acreages rounded

Barefoot Banded Gecko

The barefoot banded gecko has a limited distribution ranging from eastern San Diego County, western Imperial County, to as far south as central Baja California, Mexico along eastern Peninsular Ranges (CDFG, 2004; Grismer, 2002). It is nocturnal and lives in rocky, boulder-strewn desert foothills where it spends most of its life deep in rock crevices and subterranean chambers. For these reasons, alone, it can be difficult to determine impacts to the species. The Sunrise Powerlink project is only project within the cumulative impact analysis area that is expected impact the species. The Sunrise Powerlink project would be constructed through habitat known to be occupied by the species (within the I-8 Island) and is anticipated to result in permanent impacts to 10.8 acres and temporary impacts to 4.5 acres of occupied gecko habitat.

Potential impacts to the barefoot banded gecko from past, present, and future projects are considered a cumulative impact because these combined impacts have a potential to reduce the extent and population size of the species within the cumulative impacts analysis area. For this reason, the cumulative impact to barefoot banded gecko would be considered a significant impact under CEQA. The magnitude of the cumulative impact to barefoot banded gecko habitat is small given that there tens of thousands of acres within the cumulative impacts analysis area (the exact area of occupied gecko habitat is not known).

The current and reasonably foreseeable projects would be required to implement mitigation measures to minimize impacts to the species. The Sunrise Powerlink project is required to obtain a 2081 Incidental Take Permit for the species and comply with the conditions of that permit.

Burrowing Owl

This burrowing owl is found the length of the State of California in appropriate habitats, but its numbers have been markedly reduced for at least the past 60 years by the conversion of grasslands, by other habitat destruction, and by the poisoning of ground squirrels. The agricultural lands of the Imperial Valley support approximately 70 percent (approximately 6,400 of the 9,000 pairs) of the burrowing owls in the State of California (Wilkerson and Siegel, 2011). The proposed OWEF, combined with most of the current and reasonably foreseeable projects in western Imperial County (see Table 4.21-1) would impact the burrowing owl and have the potential to reduce the population size and extent of the species primarily through alteration and replacement of habitat. For these reasons, the cumulative impact would be significant under CEQA. The magnitude of the cumulative impact to burrowing owls is small (i.e., approximately 25 pairs based on number of known burrows) given that there are approximately 6,400 pairs within the cumulative impacts analysis area. The proposed OWEF's impacts to 3 occupied burrows amounts to less than 0.1 percent of the pairs within the cumulative impacts analysis area. Each of the projects would be required to provide mitigation to offset the loss of burrowing owl burrows and/or surrounding foraging habitat and would be required to avoid direct impacts to occupied burrows (in the case of the proposed OWEF, Mitigation Measures Wild-1l, Wild-1m, Wild-1n, and Wild-2a). These measures associated with the proposed OWEF and the mitigation measures associated with the other current and reasonably foreseeable projects would minimize impacts to the species by, at a minimum, compensating for the loss foraging habitat and protecting breeding burrowing owls by avoiding disturbance to burrows during the nesting season. The measures specific to the proposed OWEF would render the proposed OWEF's contribution to the cumulative impact less than significant under CEQA.

Golden Eagle

Direct and indirect impacts to golden eagle associated with the proposed OWEF combined with impacts associated with past, present, and future projects (see Table 4.21-1) are considered a cumulative impact to golden eagle because the impacts have a potential to reduce the extent and population size of golden eagle in the cumulative impacts analysis area and because compensation for those impacts may not be achievable. Although some of the current and reasonably foreseeable projects listed in Table 4.1-2 would result in impacts to golden eagle nest sites, the proposed OWEF would not impact golden eagle nest sites and, therefore, the proposed OWEF would not contribute to cumulative impacts to such nest sites.

Impacts to golden eagle foraging habitat associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact to golden eagle because the impacts have a potential to limit the extent of the species within the cumulative impacts analysis area. For this reason, the impact would be considered significant under CEQA. The magnitude of the cumulative impact to golden eagle foraging habitat is small (estimated at approximately 12,000-15,000 acres [Table 4.21-1]) given that there is over 250,000 acres of suitable foraging habitat within the cumulative impacts analysis area. The proposed OWEF's permanent impacts to 155.5 acres of habitat amounts to less than 0.1 percent of the available foraging habitat for the species within the cumulative impacts analysis area. The proposed OWEF and the other projects would be required to mitigate impacts to golden eagle foraging habitat. Implementation of Mitigation Measures Wild-1a, Wild-1b, Wild-1d, Wild-1o, Wild-1ff, Veg-1a, Veg-2a, and Veg-2b would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA. Impacts to golden eagles as a result of collision and electrocution are addressed below.

Collision and Electrocution Risk

Resident and migratory bird and bat species are at risk of collision with project features associated with the proposed OWEF and/ past, current, and reasonably foreseeable projects in the cumulative analysis area. These features include such structures as wind turbines, meteorological towers, and overhead transmission lines. Impacts to golden eagle and other special status bird and bat species associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact to these bird and bat species because the impacts have potential to limit the populations of the species, by causing mortality of individuals to an unknown extent, within the cumulative impacts analysis area. For this reason, the impact would be considered significant under CEQA. The proposed OWEF and the other projects would be required to minimize potential collision risk by implementing mitigation measures. For the proposed OWEF, these include Mitigation Measures Wild-1o/Wild-1ff (*Implement an Eagle Conservation Plan*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*), and Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*). Implementation of these measures would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA.

Overhead transmission lines associated with the proposed OWEF and many of the other current and reasonably foreseeable projects also pose an electrocution risk for avian species, particularly for large, aerial perching birds such as hawks and eagles, because of their large wingspan (APLIC, 2006). Potential electrocution impacts causing losses of golden eagles and raptors associated with the proposed OWEF combined with losses of individual birds from electrocution associated with past, present, and future projects are considered a cumulative impact to these species because the impacts have potential to limit the populations of the species within the cumulative impacts analysis area. For this reason, the impact would be considered significant under CEQA. For the proposed OWEF, potential impacts associated with electrocution would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1cc (*Design transmission towers and lines to conform with Avian Power Line Interaction Committee standards*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*). The other current and reasonably foreseeable projects would be required to implement similar mitigation to reduce potential electrocution impacts. Implementation of the proposed OWEF's mitigation measures would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA.

PBS

Past activities in and adjacent to PBS habitat have caused the distribution of PBS to become more fragmented in the recent past (USFWS, 2001). Additionally, PBS have altered their movement and habitat use patterns in response to human activity (Jorgensen and Turner, 1973; Hicks, 1978; Olech, 1979; Cunningham, 1982; DeForge and Scott, 1982; Gross, 1987; Sanchez et al., 1988, as cited in USFWS, 2010b). The behavioral responses of PBS to human activities may alter how they utilize resources occurring in their environment; these altered behavior patterns may negatively affect population trajectories (2010b). Therefore, direct and indirect impacts to PBS associated with the proposed OWEF combined with impacts associated with past, present, and future projects are considered a cumulative impact to PBS because the impacts have a potential to reduce the extent of the species' distribution and population size in the cumulative impacts analysis area for the reasons stated above (i.e., fragmentation, altered behavioral responses). For these reasons, the cumulative impact would be considered significant under CEQA.

The proposed OWEF and at least three of the current and reasonably foreseeable projects listed in Table 4.21-1 (i.e., Imperial Valley Solar-Solar Two, Sunrise Powerlink, and Energía Sierra Juarez Transmission Line), and possibly other projects within the cumulative impacts analysis area for which information is currently not available, would impact the PBS.

There are approximately 186,000 acres of PBS Essential Habitat (which encompasses PBS Critical Habitat) within the cumulative impacts analysis area. The proposed OWEF would directly impact 167.2 acres (or approximately 0.001 percent) of Essential Habitat. The other three projects that would impact the PBS would directly affect approximately 31 acres of occupied habitat (i.e., Essential Habitat) and seven acres of Critical Habitat, as well as 6,465 acres of PBS foraging habitat (not designated as Essential or Critical Habitat). Even if all of this acreage was considered Essential Habitat (Essential Habitat encompasses all Critical Habitat), this would amount to a loss of approximately 6,500 acres, or 0.03 percent, of the Essential Habitat in the cumulative impacts analysis area, which is a small area. However, the cumulative impact would still be significant under CEQA for the reasons stated above.

The proposed OWEF and the other projects would be required to mitigate impacts to PBS. For the proposed OWEF, implementation of Mitigation Measures Wild-1a through Wild-1e, Wild-1i, Wild-1q through Wild-1u, Wild-1x, Wild-1z, Wild-1aa, Wild-1gg, Wild-1hh, Wild-1ii, Wild-2d, Veg-1a, Veg-1d, and Veg-2b would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA.

Other Special Status Wildlife Species

Direct and indirect impacts to special status snake species (red-diamond rattlesnake and rosy boa), special status avian species (e.g., Le Conte's thrasher and loggerhead shrike), and American badger associated with the proposed OWEF combined with impacts associated with past, present, and future projects are not considered a cumulative impact to any of these species because the impacts are not expected to reduce the extent or population size of these species in the cumulative impacts analysis area because these species are common and wide-ranging within the region

4.21.10 Mitigation Measures

The following measures would be implemented to avoid or reduce impacts to wildlife species from construction, O&M, and decommissioning of the proposed OWEF. Prior to construction, the following plans would be submitted to the appropriate agencies for review and approval:

- Property Assessment Report (PAR) for FTHL compensation (if off-site purchase of FTHL habitat is proposed)
- Integrated Weed Management Plan
- Fugitive Dust Control Plan
- Worker Education Awareness Program (WEAP)
- Habitat Restoration/Revegetation Plan (HRRP)
- Wildlife Mortality Reporting Program
- FTHL Status Report
- PBS Status Report
- Eagle Conservation Plan (Applicant submitted a Draft Eagle Conservation Plan to agencies for review on March 4, 2011; the Final Eagle Conservation Plan is included as Appendix L9)
- Avian and Bat Protection Plan (Applicant submitted a Draft Avian and Bat Protection Plan to agencies for review on March 29, 2011; the Final Avian and Bat Protection Plan is included as Appendix L6)
- Raven Control Plan
- Bighorn Sheep Mitigation and Monitoring Plan

These plans or programs are explained below in more detail.

Construction and Decommissioning

The following mitigation measures are designed to avoid or reduce impacts to wildlife species during construction and decommissioning of the proposed OWEF.

Air-1	Implement a Fugitive Dust Control Plan. This measure is presented in Section 4.2.10.
Veg-1a	Minimize construction related impacts to the maximum extent practicable. This measure is presented in Section 4.17.
Veg-1d	Implement an Integrated Weed Management Plan to control non-native invasive weeds as developed in cooperation with the BLM and County of Imperial. This measure is presented in Section 4.17.
Veg-2a	Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities. This measure is presented in Section 4.17.
Veg-2b	Temporarily disturbed areas will be revegetated according to a Habitat Restoration/ Revegetation Plan (HRRP) approved by the BLM and Wildlife Agencies. This measure is presented in Section 4.17.

Wild-1a Prior to ground disturbing activities, an individual will be designated and approved by the BLM and USFWS as a Designated Biologist[5] (i.e., field contact representative). A Designated Biologist will be employed for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist will be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro). The Designated Biologist will have the authority to ensure compliance with Conservation Measures for the Peninsular bighorn sheep (PBS) set forth in the Biological Opinion (BO; currently being drafted for the proposed OWEF) and with flat-tailed horned lizard (FTHL) mitigation measures included herein and will be the primary agency contact for the implementation of these measures. The Designated Biologist will have the authority and responsibility to halt any proposed OWEF activities that are in violation of the BO Conservation Measures or Mitigation Measures. A detailed list of responsibilities of the Designated Biologist is summarized below. To avoid and minimize effects to biological resources, the Designated Biologist will:

- Notify BLM's Authorized Officer and the USFWS at least 14 calendar days before the initiation of ground disturbing activities.
- Immediately notify BLM's Authorized Officer and the USFWS in writing if the Applicant does not comply with any BO Conservation Measures or Mitigation Measures including, but not limited to, any actual or anticipated failure to implement BO Conservation Measures or Mitigation Measures within the periods specified.
- Conduct compliance inspections daily during on-going construction as clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete.
- Evaluate effectiveness of pre-construction FTHL surveys in locating FTHLs and recommend changes to the pre-construction FTHL survey methods based on the field results.

Wild-1b Biological Monitor(s) will be employed to assist the Designated Biologist in conducting preconstruction surveys and monitoring ground disturbance, grading, construction, O&M, decommissioning, and restoration activities. The Biological Monitor(s) will have sufficient education and field experience to understand PBS and FTHL biology, have, experience conducting FTHL field monitoring, be able to identify PBS, PBS sign, FTHL, and FTHL scat, and be able to identify and follow FTHL tracks. The Designated Biologist will submit a resume, at least three references, and contact information for each prospective Biological Monitor(s) to the BLM and USFWS for approval. To avoid and minimize effects to biological resources, the Biological Monitor(s) will assist the Designated Biologist and Bighorn Sheep Monitor with the following:

- Be present during construction activities that take place in PBS Essential Habitat to prevent or minimize harm or injury to PBS.
- Be present during construction activities that take place in FTHL habitat to prevent or minimize harm or injury to FTHL. Activities of the Biological Monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures, monitoring for FTHLs and removing them from harm's way, and checking the staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits.

---

[5] Designated Biologist must have: (1) a Bachelor's degree with an emphasis in ecology, natural resource management, or related science; (2) three years of experience in field biology or a current certification of a nationally recognized biological society such and The Ecological Society of America or the Wildlife Society; (3) previous experience with applying terms and conditions of a Biological Opinion; and (4) an appropriate permit and/or training if conducting focused or protocol surveys for listed or proposed species.

- At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the Biological Monitor will ensure that the construction crew slopes the ends of the excavation (3:1 slope) to provide wildlife escape ramps or will ensure that the construction crew completely and securely covers the excavation to prevent wildlife entry.
- During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29 degrees Celsius (85 degrees Fahrenheit) for the presence of FTHL and remove them per Construction Measure Wild-1r below.
- Inspect the site to help ensure trash and food-related waste is place in closed-lid containers and to ensure that workers do not feed wildlife.

Wild-1c Prior to proposed OWEF initiation, the Designated Biologist will implement a Worker Education Awareness Program (WEAP) that will be available in English and Spanish. Wallet-sized cards summarizing the information will be provided to all construction and O&M personnel. The WEAP will include the following:

- Biology and status of the PBS, FTHL, special status snake species, burrowing owl, other nesting special status birds, and American badger.
- Measures to reduce potential effects to the PBS, FTHL, special status snake species, burrowing owl, other nesting special status birds, and American badger.
- An explanation of the function of flagging that designates authorized work areas.
- Actions and reporting procedures to be used if PBS, FTHL, special status snake species, burrowing owl, other nesting special status birds, or American badger are encountered.
- Driving procedures and techniques to reduce wildlife species mortality on roads.
- The importance of avoiding the introduction of invasive weeds onto the proposed OWEF site and surrounding areas.
- The importance of containing and properly disposing of all trash.

Wild-1d The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to construction activities. Spoils will be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. All disturbances, vehicles, and equipment will be confined to the staked and flagged areas. If fencing is used instead of stakes and flagging, the design of the fencing will be done in coordination with the Wildlife Agencies. Furthermore, the Biological Monitor(s) will be responsible for monitoring to ensure that all delineated disturbance boundaries remain intact and will monitor for any disturbance outside of the boundaries. If fencing is used, it will be the responsibility of the Biological Monitor(s) to determine if any increased impacts are occurring to FTHL by providing fence perches for FTHL predators.

Wild-1e Speed limits along all access roads will not exceed 15 miles per hour in order to minimize dust during construction and O&M activities. A Fugitive Dust Control Plan will be implemented to address fugitive dust during construction (see Mitigation Measure Air-1 in section 4.2.10).

Wild-1f To the maximum extent practicable, grading or other ground-disturbing activities in FTHL habitat will be conducted during the active season, which is defined as March 15 through November 15, or when ground temperatures are between 24 degrees Celsius (75 degrees Fahrenheit) and 38 degrees Celsius (100 degrees Fahrenheit). If grading or other ground-disturbing activities cannot be conducted during this time, any FTHLs found will be removed to nearby habitat away from proposed OWEF components and roads where suitable burrowing habitat exists. The Designated Biologist or Biological Monitor(s) will be present during any grading or other ground-disturbing activities outside the active season and will be responsible for removing FTHL from harm's way in accordance with Wild-1g.

Wild-1g FTHLs will be removed from harm's way during all construction activities. FTHL removal will be conducted under the supervision of the Designated Biologist and by two or more Biological Monitors when construction activities are being conducted in occupied FTHL habitat. To the extent feasible, methods to find FTHLs will be designed to achieve a maximal capture rate and will include, but not be limited to, using strip transects, tracking, and raking around shrubs. During construction, the minimum survey effort will be 30 minutes per 0.40 hectare (1 acre). Persons that handle FTHLs will first obtain all necessary permits and authorization from the CDFG. FTHL removal surveys also will include:

- Accurate records maintained by the Biological Monitors for each relocated FTHL including sex, snout-vent length, weight, air temperature, location, date, time of capture and release, a close-up photo of the lizard, and a photo of the habitat where it was first encountered. To the extent feasible, a sample of the lizard scat will be collected. A Horned Lizard Observation Data Sheet and a Project Reporting Form, from Appendix 8 of the FTHL Rangewide Management Strategy (FTHL Interagency Coordinating Committee [ICC] 2003) will be completed. During construction, quarterly reports describing FTHL removal activity will be submitted to the BLM, USFWS, and CDFG.
- The removal of FTHLs out of harm's way, including those found on access or maintenance roads, will include their relocation to nearby suitable burrowing habitat away from proposed OWEF components and roads. Relocated FTHLs will be placed in the shade of a large shrub in undisturbed habitat. The Designated Biologist or Biological Monitor will be allowed some judgment and discretion when relocating lizards to maximize survival of FTHLs found on the proposed OWEF site.

Wild-1h To compensate the loss of occupied FTHL habitat, the FTHL Rangewide Management Strategy allows for the purchase of FTHL habitat and/or monetary compensation, as determined by the FTHL Interagency Coordinating Committee. Permanent impacts to 23.9 acres and temporary impacts to 108.4 acres of occupied FTHL habitat from the Proposed Action will be mitigated at a 1:1 ratio. If off-site purchase of FTHL habitat is proposed, the Applicant will obtain approval of the BLM, FTHL Interagency Coordinating Committee, and Wildlife Agencies prior to the purchase, and will ensure long-term management and protection of the land through the following:

- Prepare a Property Assessment Report (PAR) tailored to the specific acquisition to determine the long-term management funding; and
- The land will be deeded and transferred to the BLM and managed consistent with the management activities outlined in the FTHL Rangewide Management Strategy.

Wild-1i Minimize night lighting during construction by using shielded directional lighting that is pointed downward thereby avoiding illumination to adjacent natural areas and the night sky. Night lighting will only be used when necessary for worker safety, and if used for security purposes, will be motion or heat activated.

Wild-1j Implement a Raven Control Plan (approved by BLM and USFWS prior to construction) for the portion of the proposed OWEF within occupied (and assumed occupied) FTHL habitat. The Raven Control Plan will identify the purpose of conducting raven control and include, at a minimum, training on how to identify raven nests and how to determine whether a nest belongs to a raven or a raptor species; describe the seasonal limitations on disturbing nesting raptors; describe raven control methods to be employed (e.g. perching and nesting deterrents); and describe procedures for documenting the activities on an annual basis. The plan will provide details on the specific measures for storage and disposal of all litter and trash to discourage scavengers that may prey on the FTHL. The methods and reporting requirements will be developed to be consistent with the monitoring and reporting requirements of the Raven Control Plan prepared for the Sunrise Powerlink project, which crosses through the proposed OWEF.

Wild-1l Prior to the start of construction, a survey for the burrowing owl will conducted during the burrowing owl breeding season in accordance with the California Burrowing Owl Consortium (CBOC) Guidelines (1993). If it is discovered that there is an occupied burrowing owl burrow, construction activities will be halted, and the California Department of Fish and Game, in Ontario at (909) 484-0167, MCRodriguez@dfg.ca.gov and the BLM, El Centro, Resources Section, (760) 337-4400 will be notified immediately. Also see Wild-2a.

Wild-1m Construction piping or any other construction material with a diameter greater than three inches will be capped or covered if the piping or materials are to be stored in staging areas or temporary impact areas for more than three days. If construction piping or construction materials greater than three inches in diameter are not covered or capped, they will be inspected by the Designated Biologist or Biological Monitor prior to being moved or buried.

Wild-1n The loss of 19.5 acres of burrowing owl foraging habitat within 300 feet of the 3 known occupied burrows will be mitigated at a minimum 1:1 ratio through a combination of off-site habitat compensation, on-site revegetation of temporary impact areas, and/or on-site or off-site restoration of disturbed habitat. Actual mitigation acreage requirements will depend on the pre-construction burrowing owl surveys to be conducted in accordance with Mitigation Measure Wild-2a. If off-site purchase of burrowing owl habitat is proposed, the Applicant will obtain approval of the BLM and CDFG prior to the purchase, and will ensure long-term management and protection of the land through a conservation easement and funding to provide long-term management.

Wild-1o The Applicant will implement an Eagle Conservation Plan to address proposed OWEF impacts to golden eagles. The Applicant will submit an Eagle Conservation Plan to the BLM and Wildlife Agencies for review and approval prior to initiation of proposed OWEF construction. The Eagle Conservation Plan will be prepared in accordance with the Draft Eagle Conservation Plan Guidance (USFWS, 2011b). The Eagle Conservation Plan will describe the golden eagle studies completed for the proposed OWEF; a risk analysis; advanced conservation practices to be implemented during operations, including a description of the adaptive management strategy for the proposed OWEF and compensatory mitigation; and post-construction monitoring and reporting procedures for golden eagles.

Wild-1p The Applicant will implement a Avian and Bat Protection Plan to address proposed OWEF impacts to special status avian and bat species and will submit the plan to the BLM, USFWS, and CDFG for review and approval prior to initiation of proposed OWEF construction. The Avian and Bat Protection Plan will be prepared in accordance with the interim guidance provided by USFWS (2010d). The Avian and Bat Protection Plan will describe proposed OWEF design features and advanced conservation practices to be used to minimize the risk of collision pre-construction, during construction, and during O&M. The plan will include monitoring, adaptive management, and reporting procedures. The post-construction monitoring methods will be based on the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CEC 2007).

Wild-1q Temporary impacts to 124.1 acres of USFWS Essential Habitat for PBS from the Proposed Action will be mitigated at a 1:1 ratio through revegetation of all temporary impact areas. Prior to the start of construction, a Habitat Restoration/Revegetation Plan (HRRP) will be approved in writing by BLM, USFWS, and CDFG in accordance with Mitigation Measure Veg-2b (see Veg-2b for details). The HRRP will address revegetation of habitats for special status wildlife species, including but not limited to PBS, FTHL, and burrowing owl. If after five years of monitoring, there are areas that do not meet the success criteria outlined in the HRRP, these areas will be compensated off site at a 1:1 ratio of equal or better quality habitat compared to what was impacted, in accordance with Mitigation Measure Veg-2a.

Wild-1r The Proposed Action's permanent impacts to 43.1 acres of USFWS Essential Habitat for PBS will be compensated at a 1:1 ratio by purchasing or restoring Essential Habitat from private landowners, which will be made permanently available for PBS. "Available" is defined as habitat located in or immediately adjacent to the Essential Habitat line, as delineated in the Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (USFWS 2000).

Wild-1s Prior to construction, a Bighorn Sheep Mitigation and Monitoring Plan will be submitted to the BLM, USFWS, and CDFG for review and approval. The monitoring plan will describe the monitoring and reporting procedures and the construction limitations to be implemented if sheep are observed in the proposed OWEF site. The monitoring procedures must comply with the standards set by USFWS and CDFG for performing bighorn sheep monitoring.

Wild-1t A biological consultant approved by the BLM, USFWS, and CDFG will be retained by the Applicant to serve as the Bighorn Sheep Monitor of construction activities within USFWS Essential Habitat on the proposed OWEF site, in accordance with the Bighorn Sheep Mitigation and Monitoring Plan for the proposed OWEF. The Bighorn Sheep Monitor will be present if proposed OWEF activities are planned within 300 meters (approximately 1,000 feet) of Essential Habitat. If PBS are observed within the Action Area, no construction activities will be conducted within 1,000 feet of the sheep until the Bighorn Sheep Monitor verifies that the sheep have moved to at least 1,000 feet from planned activities. If the Bighorn Sheep Monitor determines that proposed OWEF activities are unlikely to adversely affect or disrupt normal behavior of the PBS, planned activities may proceed. If the Bighorn Sheep Monitor is not present on site when sheep are observed, all proposed OWEF activities within 1,000 feet of Essential Habitat will stop, and the Bighorn Sheep Monitor will be contacted immediately for guidance on how to proceed with planned activities. The Bighorn Sheep Monitor will have complete access to the Applicant's proposed ABOCC observation tower and radar and camera system. The Bighorn Sheep Monitor will prepare daily monitoring reports that will be submitted to the Designated Biologist and BLM, as well as to the USFWS and CDFG.

Wild-2a A survey will be conducted within 30 days prior to the initiation of construction or major O&M activities (e.g., major turbine component replacement or grading—not turbine operation or regular maintenance inspections) by a qualified biologist to determine the presence or absence of the burrowing owl in the work zone plus 250 feet beyond. If it is discovered that there is an occupied burrowing owl burrow, activities will be halted, and the California Department of Fish and Game, in Ontario at (909) 484-0167, MCRodriguez@dfg.ca.gov and the BLM, El Centro, Resources Section, (760) 337-4400 will be notified immediately. No disturbance will occur within 250 feet of occupied burrows during the breeding season (February 1 through August 31) or within 50 meters (approximately 160 feet) of occupied burrows during the non-breeding season (September 1 through January 31; CDFG 1995). The results of the burrowing owl survey will be provided to BLM and CDFG for review and concurrence prior to the start of construction or major O&M activities.

Passive relocation of owls will be implemented prior to construction or major O&M activities only at the direction of the CDFG, and only if the above-described occupied burrow disturbance absolutely cannot be avoided (e.g., due to physical or safety constraints). Relocation of owls will only be implemented during the non-breeding season (September 1 through January 31; CDFG, 1995). A Burrowing Owl Mitigation and Monitoring Plan will be submitted to the BLM's Authorized Officer and CDFG for review and approval prior to construction, major O&M activities, and passive relocation.

Wild-2b Vegetation clearing will take place outside of the general avian breeding season (February 15-September 1), when feasible. If vegetation clearing cannot occur outside the avian breeding season, the Designated Biologist/Biological Monitor will conduct a preconstruction survey for nesting birds no more than 7 days prior to vegetation clearing. If no active nests are found, clearing can proceed. If active nests are found, no clearing would be allowed within 100 feet of the active nests of non-listed species, 300 feet of the active nests of listed species, and 500 feet of active raptor nests until the Designated Biologist/Biological Monitor determines the nest is no longer active or the nest fails. The Designated Biologist/Biological Monitor will submit the results of the pre-construction nesting bird surveys to BLM and appropriate agencies.

Wild-2c A qualified biologist will survey for American badger concurrent with the pre-construction survey for burrowing owl. If badgers are detected, the biologist will passively relocate badgers out of the work area prior to construction if feasible. If an active den is detected within the work area, the Applicant will avoid the den, if feasible, until the qualified biologist determines the den is no longer active. Dens that are determined to be inactive by the qualified biologist will be collapsed by hand to prevent occupation of the den between the time of the survey and construction activities.

Wild-2d Construction of WTGs within 1,200 meters (approximately 3,900 feet) of PBS lambing sites will be precluded during the PBS lambing season (i.e., January 1 through June 30). For the proposed OWEF, 8 WTGs (WTGs 22-28 and WTG 77) are proposed within 1,200 meters of 2010 lambing sites in the I-8 Island (i.e., the area between the eastbound and westbound lanes of I-8, the northern portion of which is in the Project Area), and there is direct line of sight between the lambing areas and the proposed WTGs. In addition, four additional WTGs (WTGs 19-21 and WTG 29) would not be constructed during the lambing season because the access road to these WTGs would also be restricted from use by heavy equipment during the lambing season. Furthermore, site preparation and use of the staging area adjacent to the existing railroad will be precluded during the lambing season. The Bighorn Sheep Monitor will coordinate with USFWS and CDFG to help determine the locations of any nearby lambing sites being used prior to and during the construction period of the proposed OWEF.

Wild-2e A biological consultant approved by the BLM and wildlife agencies will be retained by the Applicant to collect data on PBS movements in the Project Area during the construction phase. The study methods will be described in the Bighorn Sheep Mitigation and Monitoring Plan and submitted to the BLM, USFWS, and CDFG for review and approval.

Operation and Maintenance

The following measures will be implemented during O&M of the proposed OWEF.

Wild-1u The Designated Biologist or Biological Monitor(s) will evaluate and implement the best measures to reduce FTHL and other wildlife species mortality along access and maintenance roads, particularly outside the active period (March 15 through November 15). These measures will include:

- A speed limit of 15 miles per hour in occupied FTHL habitat, and all vehicles must remain on designated access/maintenance roads.
- Pedestrian access outside the limits of the designated access/maintenance roads is permitted year-round as long as no ground disturbing activities take place (e.g., vegetation treatment and weed management or other activities that would require soil disturbance beyond pedestrian footprints).
- Any O&M activity that may result in ground disturbance outside the designated access/maintenance roads will be conducted during the FTHL active period whenever feasible.
- If any O&M activity must be conducted outside the FTHL active period that may result in ground disturbance, such as weed management or vehicular access off of a designated access/maintenance road, the Designated Biologist or a Biological Monitor will be present during such activity to ensure that no FTHL mortality results.
- If fencing is installed during any O&M activity, the design of the fencing will be done in coordination with the Wildlife Agencies. Furthermore, the Biological Monitor(s) will be responsible for monitoring to ensure that all fencing remains intact and will monitor for any disturbance outside of the fencing. It will also be the responsibility of the Biological Monitor(s) to determine if any increased impacts are occurring to FTHL by providing fence perches for FTHL predators.

Implementation of these measures will be based on FTHL activity levels, the best professional judgment of the Designated Biologist or Biological Monitor, and site-specific road utilization. FTHL found on access/maintenance roads, if/when monitoring is required, will be relocated as discussed above.

Wild-1v No later than January 31 of each year the proposed OWEF remains in operation, the Designated Biologist will provide the BLM's Authorized Officer, USFWS, CDFG, and FTHL Interagency Coordinating Committee an annual FTHL Status Report that will include at a minimum:

- A general description of the status of the proposed OWEF site.
- Information from the Annual Compliance Report documenting compliance/non-compliance with each avoidance and minimization measure.
- An assessment of the effectiveness of each avoidance and minimization measure.
- A completed Project Reporting Form from Appendix 8 of the FTHL Rangewide Management Strategy (FTHL ICC 2003).
- A summary of information regarding any FTHL mortality in conjunction with the Wildlife Mortality Reporting Program (Mitigation Measure Wild-1hh).
- Recommendations on how the avoidance and minimization measures might be changed to more effectively avoid or minimize future effects to FTHL.

Wild-1w Implement the Raven Control Plan.

Wild-1x An annual report will be prepared by the Designated Biologist and submitted to the relevant resource agencies documenting the implementation of the following programs/plans as well as compliance/non-compliance with each avoidance and minimization measure.

- Weed Management Plan
- Worker Education Awareness Program

- Habitat Restoration/Revegetation Plan
- Wildlife Mortality Reporting Program
- Raven Control Plan
- Bighorn Sheep Mitigation and Monitoring Plan
- Burrowing Owl Mitigation and Monitoring Plan

Wild-1y The HRRP will be implemented in accordance with Mitigation Measure Veg-2b.

Wild-1z Implement the Integrated Weed Management Plan. Invasive weeds and non-native plants will be controlled during O&M for the life of the proposed OWEF according to the measures provided in the proposed OWEF's Integrated Weed Management Plan.

Wild-1aa Night lighting will be minimized by using directional lighting that is shielded down away from the surrounding natural areas and the night sky. Night lighting during O&M will be minimized to the amount necessary to meet Federal Aviation Administration (FAA) standards. Lighting on wind turbine generators (WTGs) will include the minimum number of flashes and the briefest flash duration to meet FAA standards. The proposed directional motion activated security lighting at the O&M building will be shielded down.

Wild-1bb Implement the Avian and Bat Protection Plan.

Wild-1cc Project transmission lines will conform to Avian Power Line Interaction Committee (APLIC) standards for collision-reducing techniques (APLIC 2006).

Wild-1dd A biological consultant approved by the BLM, USFWS, and CDFG will be retained by the Applicant to conduct a post-construction bird and bat species mortality monitoring program in accordance with the monitoring and reporting methods of the Eagle Conservation Plan (Mitigation Measure Wild-1o) and Avian and Bat Protection Plan (Mitigation Measure Wild-1p).

Wild-1ee Prepare and receive approval from the BLM of a Wildlife Mortality Reporting Program. This program will be implemented during O&M and calls for the identification and reporting of any dead or injured animals observed by personnel conducting O&M activities. Reporting is necessary during construction and O&M to demonstrate compliance with the avoidance and minimization measures, to assess the effectiveness of the measures, and to make recommendations, if necessary, for future compliance. An appropriate reporting format will be developed in coordination with the BLM and USFWS.

Wild-1ff Implement the Eagle Conservation Plan.

Wild-1gg The Designated Biologist, Biological Monitor(s), and/or Bighorn Sheep Monitor will evaluate and implement the best measures to minimize PBS disturbance. These measures will include:

- The Bighorn Sheep Monitor will monitor major O&M activities (e.g., activities that require soil disturbance, removal of turbine blades, or use of large equipment such as cranes, but not such activities as WTG operation or regular maintenance inspections) in accordance with the measures described in the Bighorn Sheep Mitigation and Monitoring Plan. If PBS are observed or detected by the Designated Biologist, Monitoring Biologist, or Bighorn Sheep Monitor within the Project Area, these types of major O&M activities will not be conducted within 1,000 feet of the sheep until the Bighorn Sheep Monitor verifies that the sheep have moved to at least 1,000 feet from the major O&M activities. If the Bighorn Sheep Monitor determines that proposed activities are unlikely to adversely affect the sheep or disrupt normal behavior, these activities could proceed. If the Bighorn Sheep Monitor is not present on site when sheep are observed, all of these types of major O&M activities will stop, and the Bighorn Sheep Monitor will be contacted immediately for guidance on how to proceed.

O&M activities could proceed when the Bighorn Sheep Monitor/Designated Biologist verifies that the sheep have moved to at least 1,000 feet from the major O&M activities or determines that proposed activities are unlikely to adversely affect the sheep or disrupt normal behavior.

- The Applicant will employ a biologist at the ABOCC observation tower full time for the first 10 years of operation. The success of the monitoring will be determined by the monitoring biologist in coordination with USFWS, CDFG, and BLM. The monitoring biologist will be approved by the BLM and USFWS. The two primary responsibilities of the biologist will be to monitor for PBS and raptors. The Merlin Avian Radar System will be placed on the ABOCC observation tower during O&M and will be programmed to monitor the sky for raptors and not the ground for PBS.
- All vehicles must remain on designated access/maintenance roads.
- The biological consultant retained to collect data on PBS movements in the Project Area during the construction phase (Mitigation Measure Wild-2e) will also be retained to collect data on PBS movements in the project area during the first five years of operation of the OWEF.

Wild-1hh No later than January 31 of each of the first three years the OWEF remains in operation, the Designated Biologist will provide the BLM's Authorized Officer, USFWS, and CDFG an annual PBS Status Report that will include at a minimum:

- A general description of the status of the proposed OWEF site.
- Information from the Annual Compliance Report documenting compliance/non-compliance with each avoidance and minimization measure.
- An assessment of the effectiveness of each avoidance and minimization measure.
- A summary and map of PBS sightings within the proposed OWEF site.
- Recommendations on how the avoidance and minimization measures might be changed to more effectively avoid or minimize future effects to PBS.

Wild-1ii The Applicant will participate in the coordination effort between BLM and proponents of other planned renewable energy projects in or near Peninsular bighorn sheep habitat to fund the design and construction of a wildlife overpass across I-8, at locations determined by species experts and the wildlife agencies to be most likely to benefit the species. An overpass would reduce the risk of mortality from collision with vehicles on I-8 and promote regional connectivity. Further, it would support the affected population's current southward expansion that is a critical part of population recovery.

Impacts of Mitigation Implementation

Implementation of some of the mitigation measures described above could cause certain environmental effects, which would primarily be temporary in nature. Specifically, implementation of Mitigation Measures Wild-1r, Wild-1y, and Wild-1z could cause disturbance to special status wildlife resources as a result of the use of herbicides, increased human activity, and the use of vehicles throughout the project area that may result in wildlife mortality.

In accordance with Mitigation Measure Wild-1r, tamarisk (*Tamarix* sp.) removal would be conducted at Carrizo Marsh specifically to provide compensatory mitigation for project impacts to jurisdictional habitat, PBS Essential Habitat, and sensitive vegetation communities. This restoration effort has the potential to impact the state and federally listed endangered least Bell's vireo (LBV; *Vireo bellii pusillus*), which breeds in the Carrizo Marsh restoration area. Potential impacts to the LBV include disruption of nesting activities through temporary human presence, mechanized noise, and habitat alteration (albeit tamarisk removal would benefit the LBV). In order to minimize or avoid potential impacts to the LBV, measures would be implemented as part of the OWEF Off-Site Habitat Restoration Plan (Appendix L2), which include, but are not limited to: (1) conducting a pre-restoration activity survey for the LBV; (2) having restoration work supervised by a USFWS-approved LBV biologist; and (3) removing tamarisk outside the LBV breeding season, and preserving islands of habitat based on typical LBV territory size.

Implementation of weed control as part of the Habitat Restoration and Revegetation Plan (Wild-1y) and Integrated Weed Management Plan (Wild-1z) has the potential to impact special status wildlife resources on the proposed OWEF site. For example, wildlife could be crushed by vehicles used to access the site, and herbicide application could harm wildlife due to incidental exposure to herbicide. Invasive weed populations that occur in and directly adjacent to temporary project disturbance areas will be controlled using physical and chemical means. Maps of existing invasive weed populations within the OWEF project area have been provided in the Draft IWMP. Appendix A of the Draft IWMP includes a description of the physical and chemical control techniques for each of the noxious weeds within the project area. The two herbicides that would be used for weed control include glyphosate (trade names Roundup Pro, Aqua Neat [approved for use in wetland areas] among others) and triclopyr (trade name Tahoe 4E among others), which are herbicide chemicals found in several commonly used herbicides such as and Tahoe 4E. The schedule for weed control, as defined in the Draft IWMP, includes semi-annual visits to treat weed growth in mid-winter and in mid-spring. The schedule for weed control within the temporary disturbance areas to be revegetated, as part of the HRRP, would include quarterly visits initially and may be reduced to semi-annual visits towards the end of the 5-year revegetation period. Application of herbicides to control weed growth would be implemented in accordance with the Programmatic EIS for using herbicides on BLM lands (BLM 2007). The amount of herbicide to be used will be dependent upon the phenology of each of the weed populations, size of the populations, and time of year. Application rates will be in accordance with the BLM's Programmatic EIS and herbicide product labels, which state that the maximum application rates for glyphosate are a 5 percent solution for backpack sprayers and a 33 percent solution for a sponge applicator; the maximum application rate for triclopyr is 8 quarts of herbicide per acre of weeds treated.

Measures, such as, but not limited to, using herbicides with low toxicity to wildlife and not using herbicides during critical wildlife breeding periods, have been incorporated into the these plans to minimize or avoid potential impacts from the implementation of chemical use in mitigation measures for wildlife resources. Even with the incorporation of these minimization measures the use of herbicides has the potential to result in additional impacts to wildlife species. Impacts to special status wildlife species are discussed in more detail below.

The use of herbicides in FTHL-occupied habitat increases the potential for herbicide to be incidentally applied to FTHL that may not be seen by herbicide applicators. Saharan mustard, Russian thistle, Mediterranean schismus, and red brome occur in FTHL-occupied habitat. All herbicides that are to be used on the project, including in FTHL-occupied habitat, would be applied directly and locally to weed species and would not be broadcast sprayed over a large area. As such, any accidental application of herbicides to FTHL is expected to occur as cross spray exposure and would not be a concentrated application of herbicide. The application of glyphosate and triclopyr is not expected to affect FTHL's ability to persist in the project area because accidental exposure is not expected to result in mortality of FTHL. Overall, it is expected that the FTHL population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to FTHL when dense stands of weeds close off open areas of the desert that can be used by FTHL for basking in sunlight and foraging).

Similar to FTHL, the use of glyphosate and triclopyr has the potential to impact special status snake species as a result of incidental drift exposure to herbicide spray that may come into contact with snakes that are not observed by herbicide applicators. The application of herbicides is not expected to affect special status snake species' ability to persist in the project area because accidental exposure is not expected to result in mortality of snakes. Overall, it is expected that the special status snake population will not benefit or be reduced from the use of herbicides.

The use of glyphosate and triclopyr near burrowing owl and American badger burrows increases the potential for drift exposure to herbicide spray that may come into contact with burrowing owls and badgers. Saharan mustard, Mediterranean schismus, and red brome occur near burrowing owl and badger burrows that have been mapped within the OWEF project area during 2010 and 2011. All herbicides are to be used on the project, including near burrows, would be applied directly and locally to weed species using low-pressure backpack sprayers with a cone nozzle set to apply herbicide as a narrow stream, which minimizes drift. Sponge applicators may also be used to apply herbicide directly to dense populations of weed species by swiping the weeds with the applicator; no drift would occur through the use of sponge applicator. Herbicides not be broadcast sprayed over large areas. Direct (accidental) application of herbicides to burrowing owls is not expected to occur because burrowing owls will flush from a burrow when humans approach. Similarly, herbicide would not be applied directly to American badger burrows. To minimize the disturbance to burrowing owls and badgers, the Designated Biologist and Biological Monitors will keep weed maintenance personnel informed of the locations of burrowing owl burrows and no herbicide would be applied within 250 feet of active burrows. The application of herbicides up to 4 times per year is not expected to affect burrowing owls or American badgers ability to persist in the project area because neither species would not be directly exposed to herbicides and the level of human activity is not expected to result in substantial disturbance to either species (as compared to pre-project human activity levels). Overall, it is expected that the burrowing owl and American badger population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to burrowing owls when dense stands of weeds close off the owls' viewshed of surrounding habitat and invasive weed areas are also considered less preferred foraging areas for owls and badgers).

Similar to FTHL and special status snake species, the use of glyphosate and triclopyr has the potential to impact special status nesting bird species as a result of drift exposure to herbicide spray that may come into contact with nesting birds that are not observed by herbicide applicators. The application of herbicides is not expected to affect special status bird species' ability to persist in the project area because accidental exposure is not expected to result in mortality of bird species. Overall, it is expected that the special status nesting bird population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to most nesting bird species when dense stands of weeds close off open areas of the desert that can be used by birds for foraging and/or nesting).

Glyphosate would be used in PBS Essential Habitat to control Saharan mustard, Russian thistle, Mediterranean schismus, and red brome. All herbicides are to be used on the project, including in PBS Essential Habitat areas, would be applied directly and locally to weed species and would not be broadcast sprayed over a large area. Application of Glyphosate would result in mortality of weeds within 2 weeks of application. Direct application of herbicides to PBS is not expected to occur because PBS flee when approached by humans; in addition, project activities, including weed maintenance activities, would not be allowed to occur within 1,000 feet of PBS, in accordance with Mitigation Measure Wild-1t. To minimize the disturbance to PBS, the Designated Biologist, Biological Monitors, and Bighorn Sheep Monitor will keep weed maintenance personnel informed of the locations of PBS in the vicinity of the project. The application of herbicides up to 4 times per year is not expected to affect PBS' ability to persist in the project area because the species would not be directly exposed to herbicides and the level of human activity is not expected to result in substantial disturbance to PBS (as compared to pre-project human activity levels). Overall, it is expected that the PBS population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to PBS when dense stands of weeds close off potential foraging areas for sheep and decrease the overall habitat quality for PBS).

4.21.11 Residual Impacts After Mitigation

Implementation of the avoidance, minimization, and mitigation measures described in Section 4.21 would mitigate the direct and indirect impacts to wildlife resources on the OWEF site, under CEQA, to a level below significance. Implementation of the required mitigation itself would not result in any additional impacts to wildlife resources. Residual impacts to wildlife resources following mitigation, if any, would be inconsequential.

The proposed OWEF and two build alternatives would impact FTHL, special status snake species, burrowing owl, golden eagle (and other migratory birds), nesting birds, bats, American badger, and Peninsular bighorn sheep. Implementation of Mitigation Measures Wild-1a through Wild-1hh, Wild-2a through Wild-2d, Veg-1a through Veg-1d, Veg-2a, and Veg-2b would substantially reduce the impacts to these wildlife resources. These measures provide requirements to avoid or minimize impacts that include but are not limited to: habitat restoration/revegetation and acquisition/preservation; monitoring of wildlife by specialized biologists; preconstruction surveys and relocation of certain special status species out of harm's way; restricting proposed OWEF activities in time and place to minimize impacts to species; adherence to approved plans to protect the FTHL, PBS, eagles, birds, and bats; and monitoring with reporting to relevant resource agencies to ensure compliance with all of the mitigation measures.

Implementation of the mitigation that requires habitat restoration/revegetation would require some ground disturbance, but it would occur in areas that were previously disturbed during proposed OWEF construction. Similar restrictions to those placed on construction, O&M, and decommissioning activities would be placed on activities associated with the restoration/revegetation. The restrictions would be included in the HRRP to effectively avoid or minimize impacts to special status species.

Without mitigation, the proposed OWEF would contribute to the cumulatively substantial losses of wildlife resources within the Yuha Desert. The avoidance and minimization measures as well as compensatory mitigation to offset direct, indirect, and cumulative impacts to wildlife resources would assure compliance with state and federal laws, and the impacts are expected to have no substantially adverse effects following mitigation.

4.22 Irreversible and Irretrievable Commitment of Resources

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9), the NEPA Regulations (40 CFR §§ 1502.16, 1508.8(b)), and CEQA Guidelines Section 15126.2 require a discussion of any irreversible or irretrievable commitments of resources which would be caused by implementation of the proposed OWEF, or one of the action alternatives; the relationship between short-term uses and long-term productivity of the environment; and any growth-inducing impacts.

Resources irreversibly or irretrievably committed to a proposed action are those used on a long-term or permanent basis. This includes the use of nonrenewable resources such as metal, wood, fuel, paper, aggregate and other natural resources. These resources are considered irretrievable in that they would be used for a proposed action when they could have been conserved or used for other purposes. Another irreversible or irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

The OWEF would irretrievably commit resources over the 30-year life of the project. Construction of the proposed OWEF would commit nonrenewable resources during project construction and ongoing utility services during project operations. During project operations, oil, gas, and other nonrenewable resources would be consumed for maintenance purposes, although on a limited basis. After 30 years, the OWEF could be decommissioned and the land returned to its pre-project state, or the facility owners may wish to work with the BLM to replace the old facilities with a new re-powering project on the same site. In the event that the project is decommissioned, potentially some of the resources on site could be retrieved. However, full site recovery to its pre-project state may not be possible given the 30-year life-span of the OWEF and the many unknown variables that could affect the site. Open desert lands and sensitive desert habitats have potentially lengthy recovery time from disturbances such as development. Currently, the OWEF site is not entirely undisturbed because of ongoing off-highway vehicle use.

In addition, as a wind energy development, there will be an irretrievable commitment of groundwater due to the project as described in Section 1.3.9 (Water Usage, Amounts, Sources). However, water demand associated with construction and operation of the proposed OWEF is substantially less than water demand associated with conventional fossil-fuel developments and other renewable energy developments such as solar technology. As such, each megawatt-hour (MWh) of electricity generated by the proposed OWEF would save water that would otherwise be required for generation of electricity from other types of energy developments.

The OWEF is a renewable energy project intended to generate wind energy to reduce reliance on fossil fuels. Over the 30-year life of the OWEF, this renewable energy project would contribute incrementally to the reduction in demand for fossil fuel used to generate electricity, thereby resulting in a positive effect of the commitment of nonrenewable resources to the OWEF.

4.23 Short-term Uses of Man's Environment and the Maintenance/Enhancement of Long-term Productivity

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9) and the NEPA Guidelines (40 CFR 1502.16) require a discussion of the relationship between short-term uses and long-term productivity of the environment from implementation of the proposed OWEF or one of the action alternatives. "Short term" refers to the total duration of project construction, whereas "long term" refers to an indefinite period beyond the construction of the project. The specific impacts of the proposed project vary in kind, intensity, and duration according to the activities occurring at any given time. The proposed project involves tradeoffs between long-term productivity and short-term uses of the environment.

The short-term uses of the environment as a result of the OWEF and its built alternatives include those typically found with wind energy development. Short-term impacts associated with construction activities described elsewhere in Chapter 4, Environmental Consequences, include effects to the natural environment, cultural resources, and recreation resources. These can be compared to the long-term benefits of the Proposed Action and its built alternatives all of which would provide for the production of clean, renewable energy consistent with Federal and State goals to increase production of renewable energy to help reduce dependence on fossil fuels.

As discussed earlier in Section 4.22, Irreversible and Irretrievable Commitment of Resources, the Proposed Action and alternatives could permanently damage sensitive desert habitats, which in turn could adversely affect the long-term productivity of the area. However, these action alternatives would all also provide a long-term benefit by generating electric power without any increase in the use of non-renewable resources, such as fossil fuels, which would result in a benefit to air quality and a reduction in carbon-based emissions.

4.24 Growth-inducing Impacts

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9), the NEPA Regulations (40 CFR 1502.16, 1508.8(b)), and CEQA Guidelines Section 15126.2 require a discussion of any growth-inducing impacts caused by implementation of the proposed OWEF or one of the action alternatives.

CEQA Section 15126.2(d), Growth Inducing Impacts of the Proposed Project, requires a discussion of the ways in which the project could foster economic or population growth, or induce additional housing, either directly or indirectly in the surrounding environment. NEPA Regulations also provide for discussing the growth-inducing impacts of a project. (40 CFR § 1508.8(b) ["Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."].) The discussion must additionally address how a project may remove obstacles to growth, or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

Growth inducement would occur if the amount of population or employment growth projected to occur as a result of the project would exceed planned levels. Increased development and growth in an area depend on a variety of factors, including employment and other opportunities, availability of developable land, and availability of infrastructure, water, and power resources.

As discussed in Section 4.13 (Social and Economic Issues), both construction and operational labor needs would be drawn from San Diego and Imperial Counties, with both providing a sufficient supply of labor for the project. Therefore, both OWEF temporary construction and permanent operational employees are expected to reside within the region. While some construction workforce may choose to stay immediately proximate to the OWEF site during the week, it is not anticipated that workers would permanently relocate locally for temporary construction employment. It is assumed few operational workers may chose to permanently relocate within a more proximate local area of the OWEF, with the city of El Centro assumed to be the likely residing place for such relocations. Assuming a worst-case scenario of all 30 full-time workers relocating locally (including an assumed average family size of three persons per household), these relocations would only account for an increase of 0.2 percent to the existing El Centro population. This worst-case potential local area relocation is considered negligible and is anticipated to be within forecasted growth projections of the area. Furthermore, as shown in Table 3.14-2, the City of El Centro has ample available housing for any operational workers who may choose local permanent relocation to the OWEF. Therefore, employment associated with the OWEF is not considered to generate an adverse direct growth-inducing impact.

With respect to inducing growth through removing barriers to development, such as through the changing of land use designations or providing utilities to previously undeveloped areas, as discussed in Section 4.6 (Lands and Realty), the OWEF and Alternatives would not result in the conversion of any land to residential or commercial use. Therefore, the proposed OWEF and Alternatives would not involve the development of additional housing or alter land designations that could result in direct population growth. As described in Chapter 2 (Proposed Action and Alternatives), the OWEF would include the construction of twenty-three 34.5-kV circuits connecting into a 500-kV transformer and substation located at the central part of the proposed OWEF site adjacent to the new SDG&E SPL 500-kV transmission line. These transmission interconnections serve only to connect electricity generated by the OWEF to the grid, and would be located on and adjacent to land not designated for residential or commercial development. Therefore, proposed transmission line facilities associated with the OWEF would not induce growth.

With respect to inducing growth through providing access to previously undeveloped areas, the proposed OWEF would involve construction of temporary and permanent roads. However, as discussed in Section 4.16 (Transportation and Public Access), these roads would provide limited access to the proposed OWEF site only from the OWEF site entrances to substations and wind turbine generators. Project roadways would not provide access into other adjacent areas whereupon new access may create the generation of residential or commercial development. Therefore, roadway facilities associated with the proposed OWEF would not induce growth.

While the proposed OWEF would result in additional generation of electric power in the southern California region, the project would serve projected growth of the region while working toward achieving the goals of AB 32. Growth within the region is forecasted to continue with or without implementation of the proposed OWEF. Therefore, implementation of the proposed OWEF would be in response to anticipated future load growth and would be consistent with current regional planning projections.

5. CONSULTATION, COORDINATION, AND PUBLIC INVOLVEMENT

5.1 Interrelationships

The BLM's authority over the OWEF includes FLPMA [43 United States Code (U.S.C.) 1701 et seq.], Section 211 of the Energy Policy Act of 2005 (EPAct 05) (119 Stat. 594, 600), and BLM's Wind Energy Development Policy of December 19, 2008. The FLPMA authorizes BLM to issue ROW grants for renewable energy projects. Section 211 of EPAct 05 states that the Secretary of the Interior should seek to have approved a minimum of 10,000 MW of renewable energy generating capacity on public lands by 2015.

5.1.1 Department of Defense

The BLM coordinates with the Department of Defense (DOD) prior to approval of ROWs for renewable energy, utility, and communication facilities to ensure that these facilities would not interfere with military training routes. On May 25, 2010, the BLM received correspondence from the Department of the Navy regarding potential military mission impacts associated with the project. The Department of the Navy requested two mitigation measures be implemented by the Proposed Action to address DOD's concerns. The first measure was to limit total turbine height to 400 feet or less in a small area along the northern edge of the project area, due to the existence of a low-level training route with a centerline to the north of the project area. The second measure relates to utilization of turbine lighting that is compatible with military night-vision goggles. The OWEF will comply with all requirements of the DOD. Mitigation measures that address these concerns are described in the Public Health and Safety Section (4.11) of this EIS/EIR.

5.1.2 Department of Treasury

Pursuant to the provisions of the American Recovery and Reinvestment Act (ARRA), as amended, the Treasury Department is authorized to make direct payments to companies that create and place in service wind and other types of renewable energy production facilities by December 31, 2012. The applicant intends to utilize investment tax credit (ITC), which will allow a credit of 30 percent of the cost of qualified property used in a wind facility. Alternatively, the applicant would also be eligible for production tax credits (PTCs), which are a per-kilowatt hour tax credit for electricity generated by a qualified renewable energy producer during the first ten years of operation.

5.1.3 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (ACOE) has jurisdiction to protect the aquatic ecosystem, including water quality and wetland resources under Section 404 of the Clean Water Act. Under that authority, the ACOE regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, by reviewing proposed projects to determine whether they may impact such resources and, thereby, are subject to Section 404's permit requirement. Throughout the Draft PA & Draft EIS/EIR process, the

BLM has provided information to the ACOE to assist the agency in making a determination regarding its jurisdiction and need for a Section 404 permit.

On January 7, 2010, the ACOE provided direction to the Applicant and BLM to run a hydrological model in order to determine the limits of various storm intervals and to conduct field verifications. The ACOE also indicated that they would take jurisdiction of the 10-year storm limits, that no permanent structures would be allowed within the 10-year flood plain, and access roads would be allowed to cross drainages, but would need to be constructed to cross at grade (no culverts). The OWEF has been designed to comply with these requirements. On October 22, 2010, the ACOE indicated that sediment retention basins would not be allowed. During a meeting between the ACOE and the Applicant and BLM that took place on November 12, 2010, the results of the hydrological model and results of preliminary jurisdictional delineation were discussed. The ACOE confirmed initial data collection was done appropriately, agreed with the approach for the jurisdictional delineation, and agreed with the results conducted to date. BLM coordinated with the ACOE on alternatives to be analyzed in this EIS/EIR in March 2011, and the ACOE's input is reflected in the Alternatives identified in Chapter 2.

5.1.4 California Department of Fish and Game

The CDFG protects fish and aquatic habitats within the State through regulation of modifications to streambeds, under Section 1602 of the Fish and Game Code. The BLM and the Applicant have provided information to CDFG to assist the agency in its determination of the impacts to streambeds, and identification of permit and mitigation requirements. The Applicant will file a Streambed Alteration Agreement with CDFG. CDFG also has the authority to regulate potential impacts to species that are protected under the CESA (Fish and Game Code Section 2050, et seq.). Through consultation with CDFG, a determination will be made as to whether the Applicant will need to file the appropriate notice, incidental take permit application, or request for memorandum of understanding, as appropriate based on impacts associated with the Proposed Action.

5.1.5 California Department of Transportation

The California Department of Transportation (Caltrans) has jurisdiction over encroachments to Caltrans facilities and related easements and ROWs. Part of the project's electrical collection would need to cross Caltrans ROW for Interstate 8 (I-8) in order to connect Site 2 (south of I-8) to the project's substation. The Applicant will be responsible for obtaining permission for this crossing and for complying with all relevant Caltrans requirements.

5.1.6 Imperial County Air Pollution Control District

The Proposed Action is located within the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD), which reviews the plans and specifications for construction in the project area. The ICAPCD would assess emissions and possible air contamination resulting from construction and operational activities (e.g., road dust, windblown contaminants, and emissions from construction activities).

5.1.7 Imperial County

The County of Imperial would need to issue discretionary approvals for the construction of certain components of the project located within the County's jurisdiction. These discretionary approvals include a Conditional Use Permit and a variance for structure heights (turbines and meteorological towers) in accordance with the requirements of the County of Imperial Land Use Ordinance (Title 9 of the Code of Ordinances). The County also has authority to issue building permits for those components of the Proposed Action located on non-federal land. Building permits issued by the County are ministerial in nature and will be issued by the County, as required, if the project complies with all applicable building code regulations. The County also has jurisdiction to issue approvals for any easements, ROWs, and or encroachment permits where County facilities are concerned.

5.2 Consultation Processes for ESA Section 7, NHPA Section 106, and Indian Tribes

5.2.1 ESA Section 7 Compliance

The USFWS has jurisdiction to protect threatened and endangered species under the Endangered Species Act (ESA) [16 U.S.C. Section 1531 et seq.]. Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that may adversely affect a federally-listed species. This consultation was initiated through a request by the BLM to initiate formal consultation and the submittal of a Biological Assessment (BA). The USFWS accepted the BA on August 8, 2011. Following review of the BA, the USFWS is expected to issue a Biological Opinion (BO) that specifies mitigation measures, which must be implemented for any protected species.

5.2.2 NHPA Section 106 Compliance

Section 106 of the National Historic Preservation Act (NHPA), as amended, through its implementing regulations codified in "Protection of Historic Properties" (36 CFR Part 800) requires federal agencies to take into account the effects of a proposed undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. Having determined that the proposed OWEF project constitutes an "undertaking" as defined in 36 CFR Part 800.16(y) and involves the type of activity that could affect historic properties (36 CFR Part 800.3(a)), the BLM, as lead federal agency for the project, has the statutory responsibility for compliance with provisions of Section 106 of the NHPA (36 CFR Part 800.2(a)(2)). 36 CFR Part 800.1(a) states the purpose and goal of the Section 106 process as follows:

> The section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

The steps in the Section 106 process are briefly described below. Following the description of the steps is a summary presenting the BLM's compliance with the process to date:

Step 1: Initiation of the Section 106 Process. The agency official shall determine whether the proposed federal action is an undertaking per 36 CFR § 800.16 and whether it has the potential to cause effects on historic properties. The agency official shall coordinate the steps of the Section 106 process with other concurrent reviews for the project and plan for involving the public in the Section 106 process. The agency official shall also identify the appropriate SHPO, Indian tribes, and other consulting parties to be included in the consultation process.

Step 2: Identification and Evaluation of Historic Properties (Cultural Resources). Properties within a project's area of potential effect (APE) are identified with input from the State Historic Preservation Officer (SHPO), Indian tribes and other consulting parties, and evaluated for eligibility to the NRHP in consultation with the SHPO. See 36 CFR § 800.4. BLM applies NRHP criteria for eligibility for listing found at 36 CFR part 60.4, in conformance with the Secretary of the Interior's Standards and Guidelines for Evaluation (48 Federal Register 44723-44726). In general, NRHP eligibility criteria include:

> "The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
> B. That are associated with the lives of persons significant in our past; or
> C. That embody the distinctive characteristics or a type, period, method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> D. That have yielded, or may likely yield, information important in prehistory or history."

Step 3: Assessment of Effects. BLM determines whether or not the undertaking will affect historic properties listed in or eligible for the NRHP (36 CFR § 800.4(d)). BLM must seek concurrence from the SHPO, or Tribal Historic Preservation Officer (THPO) when appropriate, if it determines that no historic properties will be affected. When BLM determines that historic properties will be affected, BLM must assess whether such effects will be adverse through by applying the criteria outline at 36 CFR § 800.5(a)(1). "Effect" is defined in the regulations as an "alternative to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR § 800.16(i)). An effect is deemed to be adverse if when the effect may "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association" (36 CFR § 800.5(a)(1)).

Step 4: Resolution of Adverse Effects. Through consultation with the SHPO, Indian Tribes, other consulting parties, and the ACHP, if they elect to participate in Section 106 consultation (which they have for the OWEF), BLM will seek to resolve potential adverse effects of the proposed undertaking through a Memorandum of Agreement (MOA) or Programmatic Agreement (PA) (36 CFR § 800.6). The purpose of consultation at this phase of the process is to develop treatment measures to avoid, resolve, or minimize potential adverse effects to historic properties, which will be implemented through the MOA or PA. As explained in Section 4.4, the BLM and other consulting parties have determined that an MOA is appropriate for the OWEF. An MOA often includes a treatment plan that takes into account the effects on NRHP-eligible or listed resources, depicts the APE, discusses reporting requirements, addresses discoveries and unanticipated effects, specifies curation requirements, and provides several administrative provisions. Consulting parties, including Indian tribes, and other parties as appropriate, are invited to participate in this consultation and the development of the MOA, and would typically be invited to sign the MOA as concurring parties. BLM must notify the ACHP of its adverse effect determination and intention to resolve such adverse effects through an MOA or PA. ACHP may elect to participate in consultation for the MOA or PA. The ACHP has elected to participate in consultation for the OWEF; therefore, the BLM, SHPO, and the ACHP, must all sign the MOA for it to be executed.

Upon receipt of the OWEF plan of development (POD), the BLM followed the consultation requirements outlined within the BLM's *Protocol Agreement with the [California] State Historic Preservation Office* (BLM-SHPO, 2007) and it's *Supplemental Procedures for Solar and Wind Power Generation Applications: A Cultural Resources Amendment to the Protocol* (BLM-SHPO 2008). This required that the BLM follow the procedures as outlined within the 2008 *Protocol Amendment* and wait to consult formally with SHPO until such time as a threshold event was reached, in this case the level of complexity of the project extended beyond the scope of the California Statewide Protocol Agreement. While informal consultation with SHPO staff on the proposed project began in early 2010, consultation was formally initiated by the BLM by letter on March 22, 2011, by a letter stated the BLM's conclusion that the OWEF project had reached a level of complexity that extended beyond the scope of the *Statewide Protocol Agreement* and stated its desire to initiate formal consultation. The letter also summarized the proposed project, the status of the EIS/EIR, the status of cultural resource studies and the status of consultation with Indian tribes.

With respect to planning for public involvement in the Section 106 process, the December 22, 2010, Notice of Intent published in the Federal Register for the OWEF project stated that the BLM would use and coordinate the NEPA commenting process to satisfy the public involvement process for Section 106 of the NHPA as provided for in 36 CFR 800.2(d)(3). Chapter 4.4 and Chapter 5.2 of the Draft EIS/EIR discussed the Section 106 process and this information has been updated for the Final EIS/EIR. A copy of the draft Section 106 Memorandum of Agreement (MOA) which outlines the agency's effects determinations and proposed measures to resolve the adverse effects is included as Appendix R to this document.

Letters from the BLM were sent to Indian tribes and one non-federally recognized tribe dated February 4, 2010, informing them about the application submitted by Ocotillo Express LLC (Applicant) for a right-of-way (ROW) to conduct wind testing at the project site and to develop a wind energy generation facility near Ocotillo, California. The letters provided notification for both of the proposed projects, explained the role of the BLM and offered an invitation to the Tribes to consult in a government-to-government manner pursuant to the Executive Memorandum of April 29, 1994, and other relevant laws and regulations including Section 106 of the NHPA. The letters also requested assistance from the tribes identifying any issues or concerns about the two proposed projects, including the identification of sacred sites and places of traditional religious and cultural significance which might be affected by the proposed projects and needed to be taken into consideration by the agency.

The BLM sent follow up letters to 14 Indian tribes and one non-federally recognized tribe dated July 28, 2010, about the proposed wind development facility and invited them to enter into government-to-government and Section 106 consultation. The letters provided an update on the status of the environmental review process and cultural resources inventory planning. Attached to this letter was a copy of the Class II & III Inventory Research Design and Work Plan for their review and comment. These letters also requested assistance from the Tribes in identifying any issues or concerns they might have about the proposed project, including the identification of sacred sites and places of traditional religious and cultural significance that might potentially be affected by the project. The letters specifically asked that tribes let the agency know about areas of concern so that the cultural resources inventory could be adapted to include them. Finally, the letters notified tribes that Tierra Environmental (the archaeological contractor) would be contacting them to determine if they had tribal representatives whom would like participate in the inventory process.

Other consulting parties identified by the BLM to be invited to participate in the Section 106 consultation process include the ACOE, Pattern Energy (Ocotillo Express LLC), the County of Imperial, and the DOE. The DOE was subsequently eliminated from the Section 106 process at the request of DOE and Pattern due to the project no longer being considered for loan guarantee from the DOE. When BLM made an adverse effect determination the ACHP was also invited to participate in Section 106 consultation, including consultation related to the resolution of adverse effects (see below).

As part of the identification and evaluation of historic properties under Section 106, a literature review, record search, built environment survey and archaeological inventory was commissioned to identify historic properties within the OWEF APE. A Native American Heritage Commission Sacred Lands File search was also acquired which included a list of tribal individuals with whom to consult regarding the project and potential effects to sacred sites. The BLM utilized and expanded that list and initiated Section 106 consultation with Indian tribes to ensure that ethnographic resources and places of traditional cultural or religious concern are also taken into account (see Section 5.2.3 below).

Tribes were invited to review the inventory work plan and research design, participate in the fieldwork and provide feedback on the results of inventory. The BLM has continued to seek input from the tribes and from other consulting parties during the identification and evaluation phase of the Section 106 process, by sending a number of follow up informational letters, holding both group and individual meetings with various parties and conducting field visits to visit the OWEF project area and the cultural resources located within it. Formal consultation with the SHPO about this project, the inventory status and survey methodology was initiated on March 22, 2011.

During the inventory process, at the request of the BLM, the applicant worked closely with the archaeological contractor to redesign the project to avoid direct physical impacts to identified archaeological sites. The applicant also eliminated approximately 3000 acres of the original project area due to the sensitive nature of cultural resources found there. These two actions resulted in the complete avoidance of physical effects to the archaeological resources identified during the archaeological survey. The draft cultural resource reports were made available to consulting parties upon completion for their review and input.

To date, the Section 106 consultation process has resulted in the identification and evaluation of one tribally identified traditional cultural property (TCP), 287 archaeological resources and 245 historic built environment resources within the APE. Eligibility recommendations were provided by the archaeological contractors; of the 287 archaeological resources, 127 are recommended eligible (one of these, the Spoke Wheel Geoglyph, is already listed on the NRHP) under one or more of the NRHP criteria, and of the 245 built environment resources 3 were recommended eligible under additional criteria and had already been determined eligible including Old Highway 80, the San Diego Eastern and Arizona Railway and the Desert View Tower. The BLM has concurred with these recommendations and has provided them to the consulting parties including Tribes for input. The BLM has also found that would be no effect to the values that make the three historic built environment resources eligible to the NRHP should the OWEF or any alternatives be approved. With respect to the TCP, as explained below and in Sections 3.4 and 4.4, the BLM has assumed that the portion of it within the APE is eligible for the NRHP for purposes of Section 106.

As part of step three of the Section 106 process, the BLM applied the criteria of adverse effect and in November 2011 made its initial proposed finding that the Spoke Wheel geoglyph would be adversely affected by the OWEF due to the introduction of visual, audible or atmospheric elements that are out of character with the property and would alter its setting. This finding was provided to the consulting parties for a 45 day consultation period along with a draft MOA to document how the agency would propose to potentially avoid, minimize and resolve the adverse effects to the Spoke Wheel geoglyph. That earlier draft of the MOA also included provisions for a Historic Properties Treatment Plan, and a comprehensive Plan for Archaeological Monitoring, Post-Review Discovery, and Unanticipated Effects.

During the consultation period some Tribes provided information about a TCP that encompasses both the project site and a large area surrounding it. The Tribes assert that that this TCP should be included in the identification and evaluation process under Section 106 and NEPA.

During this time, the BLM held additional group Section 106 meetings to discuss its proposed eligibility determinations, findings of effect and ways to minimize, avoid and resolve the adverse effects as discussed in the draft MOA. The BLM also raised the issue of the TCP and began discussions on it with consulting parties including tribes. The BLM continued to meet individually with Tribes in government-to-government meetings to discuss these topics as well. While the Section 106 consulting party group meetings provide a forum for presenting project updates, presenting the results of cultural resources studies, and open discussion and sharing of ideas about information and concerns with the proposed undertaking, the individual government-to-government meetings with Indian tribes provide a forum for tribes to share information and concerns in an individual context, apart from other consulting parties. As a result of its consultations with Tribes and other parties, the BLM revised its original proposed determinations and findings to assume that the portion of the TCP within the project area is eligible for the NRHP. Using this assumption, the BLM found that there would be an adverse effect on those portions of the TCP and any potentially contributing resources within the APE related to any of the action alternatives for the OWEF. The BLM's revised determinations of eligibility and findings of effects have now been shared with the consulting parties including Tribes for their review and comment for an additional 30 days.

Step four of the Section 106 process requires the agency to consult on the resolution of the adverse effect and seek agreement on ways to avoid, minimize or mitigate the effects of the project should it be approved. Throughout the consultation process the BLM requested information from consulting parties about how the project could be modified to take those effects into account. As stated earlier, the BLM encouraged the applicant early on to: (i) redesign the OWEF to avoid physical effects; and subsequently to (ii) take into consideration views that had been shared about the cultural importance of and relationships between sites within the project area, such as the Spoke Wheel Geoglyph and viewsheds towards culturally significant geologic features such as Signal, Sugarloaf and Coyote Mountains. Based on these recommendations, the OWEF was redesigned early on in the process to avoid physically affecting all cultural resources identified during the surveys and inventories conducted on the project site. Most recently, a revised project configuration has been proposed and is currently under consideration that removes 43 turbines from the project footprint to avoid obstruction of the main viewsheds from the Spoke Wheel Geoglyph (the Refined Project). Additionally, based on information from Tribes about the sacred, religious, and cultural significance associated with cremations, the Refined Project also removes turbines from areas in close proximity to known cremations and other sensitive resources.

The BLM has identified the Refined Project as its preferred alternative. The current draft of the Section 106 MOA which has been distributed to consulting parties and is under consultation includes various measures that have been proposed by the agency and consulting parties including those that will: physically protect tangible sites within the project area through development of a robust construction and long-term monitoring plan, protect significant viewsheds through the elimination of turbines, and allow continued traditional use of the project area through development of a Tribal Access Plan to accommodate tribal ceremonial or other traditional uses of the TCP and other identified sacred sites to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions. The MOA also provides for off-site mitigation measures such as tribal language preservation programs and public education and outreach. The current draft of the MOA is included with this Final EIS/FEIR and is located in Appendix R. The BLM is continuing to consult with consulting parties on the draft MOA and anticipates a final executed document on or about April 30, 2012, which will conclude the Section 106 process.

5.2.3 Tribal Consultation

The BLM consults with Indian tribes on a government-to-government basis in accordance with several authorities including NEPA, the NHPA, the American Indian Religious Freedom Act (AIRFA), and Executive Order 13175. Under Section 106 of the NHPA, the BLM consults with Indian tribes as part of its responsibilities to identify, evaluate, and resolve adverse effects on historic properties affected by BLM undertakings. To date, the BLM has identified and invited 14 Indian tribes and one non-federally recognized Indian tribe to consult on the OWEF, including the Barona Band of Diegueno Indians, Campo Band of Mission Indians, Cocopah Indian Tribe, Ewiiaapaayp Band of Kumeyaay Indians, Fort Yuma Quechan Indian Tribe, Jamul Indian Village, Kwaaymii Laguna Band of Indians, La Posta Band of Kumeyaay Indians, Manzanita Band of Kumeyaay Indians, Mesa Grande Band of Mission Indians, San Pasqual Band of Diegueno Indians, Santa Ysabel Band of Diegueno Indians, Sycuan Band of Kumeyaay Nation, Torres-Martinez Desert Cahuilla Indians, and Viejas Band of Kumeyaay Indians.

The BLM invited federally recognized Indian tribes to consult on the OWEF on a government-to-government basis at the earliest stages of project planning. Letters from the BLM were sent dated February 4, 2010, informing them about the applications submitted by the Applicant for ROWs to conduct wind testing and to develop a wind energy project at the project site, explaining the BLM's role, and inviting them to consult in a government-to-government manner pursuant to the Executive Memorandum of April 29, 1994, and other relevant laws and regulations including Section 106. As explained above, the letters also requested assistance identifying any issues or concerns about the two proposed projects, including the identification of sacred sites and places of traditional religious and cultural significance that might be affected by the projects.

The BLM sent follow up letters to tribes on July 28, 2010, reiterating its invitation for them to enter into government-to-government and/or Section 106 consultation. This letter also: (i) provided an update on the environmental review process and cultural resources inventory; (ii) included a copy of the Class II & III Inventory Research Design and Work Plan; (iii) reiterated the BLM's request for assistance identifying tribal issues or concerns, including the identification of sacred sites and places of traditional religious and cultural significance, so that the cultural resources inventory could be adapted accordingly; and (iv) notified the Tribes that the archaeological contractor would be contacting them to determine if they had tribal representatives whom would participate in the inventory process.

Table 5-1 below summarizes the activities and good faith efforts that have been undertaken by the BLM since February 2010 as part of its tribal consultation obligations, including: written correspondence; meetings for the purposes of information and idea exchange; cultural resource site visits; and responses to information requests. Individual government-to-government meetings are discussed separately below.

Table 5-1. Significant Events in the BLM Consultation Process

Date	Type	Content
February 4, 2010	Correspondence	BLM letters to Indian tribes informing them about applications by the Applicant for ROWs to conduct wind testing and to develop a wind energy generation facility near Ocotillo, California. The letters provided notification for both of the proposed projects, explained the role of the BLM, and offered an invitation to the Tribes to initiate or continue government-to-government consultation pursuant to the Executive Memorandum of April 29, 1994, and other relevant laws and regulations including Section 106 of the NHPA. The letters also requested assistance from the Tribes identifying any issues or concerns about the projects, including the identification of sacred sites and places of traditional religious and cultural significance that might be affected by the proposed projects.
July 28, 2010	Correspondence	BLM letters to Indian tribes stating that letters were previously sent in February 2010 to introduce the proposed project and the BLM was inviting them to enter into government-to-government and/or Section 106 consultation. The letters provided an update on the status of the environmental review process and cultural resource inventory planning and extended an invitation to initiate or continue Section 106 or government-to-government consultation. Attached to this letter was a copy of the Draft Class II & III Archaeological Resources Inventory Research Design for review and comment. The letters requested assistance from the Tribes identifying any issues or concerns they might have about the proposed project, including the identification of sacred sites and places of traditional religious and cultural significance which could be affected or that are near the OWEF's APE. The letters also requested that if areas of Tribal concern exist within the Project site that the notified tribes let the BLM know as soon as possible so that the cultural resources inventory could be adapted to include them.
July 28, 2010	Document	Provided Indian tribes copies of the Draft Class II & Class III Archaeological Resources Inventory Research Design for review and comment.
November 12, 2010	Correspondence	In an effort to better facilitate both Section 106 and government-to-government consultation, the BLM sent letters to Tribes providing overview maps of all the renewable energy projects (including the OWEF) in application, under analysis, or approved within the BLM's El Centro BLM Field Office. The letters invited Tribes to meet with the BLM to discuss and consult on these projects, including the OWEF.
March 22, 2011	Correspondence	BLM letter to the SHPO stating that the BLM has concluded the OWEF has reached a level of complexity that may extend beyond the scope of the *Statewide Protocol Agreement* and states a desire to initiate formal consultation with the SHPO. The letter also summarizes the proposed project, the status of the EIS/EIR report, the status of cultural resource studies, and the status of tribal consultation.
April 8, 2011	Correspondence	BLM letters to Tribes again inviting them into government-to-government consultation and consultation pursuant to Section 106 and other relevant laws and regulations. The letters also invited Tribes to a May 12, 2011, meeting and field visit to discuss the preliminary survey results, and stated that the BLM would be happy to consult with them on a government-to-government basis should they so desire.
May 12, 2011	Section 106 Consulting	Group meeting to present and discuss preliminary archaeological survey results and to present avoidance options for sites identified to date. The meeting included a field visit to the

Table 5-1. Significant Events in the BLM Consultation Process

Date	Type	Content
	Parties Meeting	Spoke Wheel Geoglyph (CA-IMP-6988), a large lithic scatter (temp designation SAC-003) and a ceramic scatter (temp designation AMC-004).
July 27, 2011	Correspondence	BLM letter to Viejas Tribal Chairman, Mr. Anthony Pico, asking to continue the government-to-government consultation process for the proposed project pursuant to Section 106 of the NHPA and other relevant laws and regulations. The letter also sought to coordinate a meeting and field visit with Viejas prior to August 15, 2011, as requested in the July 13, 2011, and July 14, 2011, letters received from Viejas.
August 11, 2011	Correspondence	BLM letters to Tribes providing an update on the environmental review process and the status of the cultural resource inventory for the proposed project. The letters also express the desire to continue consultation to take into account effects on historic properties to which Tribes may attach religious or cultural significance as required by Section 101 and the implementing regulations of Section 106 NHPA. The letters invited Tribes to public meetings on the Draft EIS/EIR scheduled for August 24, 2011, in El Centro and August 25, 2011, in Ocotillo. In addition, the letters stated that the BLM understands through consultations that there are resources of particular concern to Tribes within the overall project area or within the proposed project's viewshed, and requests assistance in further defining these resources, their significant values, and whether those values may be directly or indirectly affected. Finally, the letters stated that the BLM seeks to understand if there are ways that the proposed project could be further modified so that any potential effects to significant cultural resources could be avoided and/or minimized, and request input about whether there are other measures that could be taken to lessen or resolve any potential impacts.
September 14, 2011	Correspondence	BLM letters to Tribes providing an update on the environmental review process and the status of the cultural resource inventory for the proposed project, and inviting to engage in government-to-government consultation. The primary purpose of the letters was to continue consultation to identify and take into account effects on historic properties to which Tribes may attach religious or cultural significance as required by Section 101 and the implementing regulations of Section 106 NHPA. The letters provided an update of on the status of archaeological fieldwork and the participation of tribal consultants. The letter also stated that through the BLM's government-to-government consultations at least one Tribe felt there was a need for an ethnographic study and, as result, the BLM requested input on such a study, and also requested input about whether there are measures that could be taken to lessen or resolve potential impacts from the proposed project. Finally, the letter summarized the examination of possible cremated human remains by San Diego medical examiner Dr. Madeleine Hinkes, and stated that all archaeological sites including those with cremations are outside of direct physical impact areas and would not be physically affected by any project component due to project reconfiguration to protect resources.
September 29, 2011	Correspondence	BLM Letter to Cocopah Indian Tribal Chairperson, Ms. Sherry Cordova, to continue consultation process with the Cocopah, updating them on the status of the Archaeological Survey Report (ARS) and upcoming fieldwork and to address issues presented in an August 12, 2011, letter from Vice Chairman Dale Phillips. The letter addressed cremation issues, stated that the BLM needs to understand if there are other tribal resources that could be indirectly affected, such as properties of traditional religious and cultural significance to the Tribe. The letter provides a list of steps that have been taken to reduce impacts as a result of input from the Cocopah and other Tribes, and asks for input on how an ethnographic study might be undertaken.
October 5, 2011	Correspondence	BLM letter to Viejas Tribal Chairman, Anthony R. Pico, acknowledging receipt of his September 27, 2011, letter dated September 27, 2011, and informing Viejas that any comments received from them on the Draft EIS/EIR by November 4, 2011, would be fully considered in recognition of the BLM's obligation under Section 106 and direction of the Executive Memorandum of April 29, 1994.
October 5, 2011	Correspondence	BLM letters to Tribes providing Draft ASR that was prepared to support, in part, the BLM's obligation to identify historic properties within the proposed project's APE pursuant to Section 106. The letters also requested opportunities to discuss the ASR before November 4, 2011, and also to receive comments on the Draft EIS/EIR by that date. The letters reiterated the BLM's interest in receiving information about tribal resources that could be affected by the proposed project, such as properties of traditional religious and cultural significance to the Tribes that may have landscape-level characteristics that would not necessarily be captured by cultural resources surveys. Finally, the letters asked that meetings and/or site visits be scheduled before October 29, 2011, to discuss conclusions in the ASR and go over potential impacts of the proposed project on cultural resources.

Table 5-1. Significant Events in the BLM Consultation Process

Date	Type	Content
October 5, 2011	Document	Provided Indian tribes copies of the Draft ASR for review and comment.
November 1, 2011	Correspondence	BLM letter to Viejas Tribal Chairman, Anthony R. Pico, to provide additional time to the Viejas to review and comment on the ASR until December 9, 2011. Additionally, the letter also committed to considering any comments on the Draft EIS/EIR that the tribe might submit on or before December 9, 2011, in recognition of the BLM's obligation under Section 106 and direction of the Executive Memorandum of April 29, 1994. In addition to feedback on the ASR and the Draft EIS/EIR, the letter also reiterated the BLM's interest in receiving information about tribal resources that could be indirectly affected by the Proposed Project, such as properties of traditional religious and cultural significance to the Tribes that may have landscape-level characteristics that would not necessarily be captured by cultural resources surveys.
November 17, 2011	Correspondence	BLM letter to Viejas Tribal Chairman, Anthony R. Pico, expressing desire to continue ongoing government-to-government consultation pursuant to Section 106, and to meet to further discuss the Draft ASR.
November 18, 2011	Correspondence	In an effort to continue facilitating both Section 106 and general government-to-government consultation, the BLM sent letters to Tribes providing updated overview maps of all the renewable energy projects (including Ocotillo Express) in application, under analysis, or approved within the BLM's El Centro Field Office. The letters invite Tribes to meet with the BLM to discuss and consult on these projects.
November 23, 2011	Correspondence	BLM letter to Indian tribes requesting continued government-to-government consultation and presenting the BLM's preliminary proposed eligibility determinations and finding of effect. The letter also provided a draft MOA based on that eligibility determination and sought the Tribes' input on the findings and determinations of effects. The letter provided the Tribes with a 45-day response period to the content of the MOA and invited the Tribes to attend group Section 106 meetings to be held on December 14, 2011, and January 5, 2011, where participants were invited to provide feedback on those materials and any other concerns with respect to the proposed action. The letters also made available the confidential appendices of the Draft ASR. Lastly, the BLM offered to meet individually with Tribes on a government-to-government basis at any time to discuss this determination, the initial draft MOA, and/or any other issues.
November 23, 2011	Document	Provided Indian tribes copies of the Draft MOA for review and comment.
November 30, 2011	Correspondence	BLM letter to Mr. Reid Nelson, Director, Office of Federal Agency Programs, ACHP, stating that the proposed project will have an adverse effect on historic properties and that the BLM is proposing to execute an MOA to resolve those effects, and seeking to determine whether the ACHP would like to participate in consultation and join the BLM, SHPO, and other consulting parties in consultation to develop the MOA for the OWEF. The letter provided status updates of the Draft EIS/EIR review process, cultural resources studies, and consultation with Native American Tribes. The letter also provided the BLM's preliminary Section 106 Findings and Determinations to date, and invited the ACHP to participate in Section 106 meetings scheduled for December 14, 2011, and January 5, 2012.
November 30, 2011	Correspondence	BLM letter to Mr. Milford Wayne Donaldson, SHPO, stating that the proposed project will have an adverse effect on historic properties and providing an initial draft MOA to resolve those effects for the SHPO's review and consideration. The letter provided status updates for the Draft EIS/EIR review process, cultural resources studies, and consultation with Native American Tribes. The letter also provided the BLM's preliminary Section 106 Findings and Determinations to date, and invited the SHPO to participate in Section 106 meetings scheduled for December 14, 2011, and January 5, 2012.
December 9, 2011	Correspondence	ACHP letter to Mr. Robert Abbey, Director, BLM, stating that the ACHP has decided to accept the BLM's invitation to participate in Section 106 consultation for the proposed undertaking.
December 14, 2011	Section 106 Consulting Parties Meeting	Group meeting to discuss and obtain input on the BLM's determinations of eligibility, findings of effect, and the content of the MOA.
December 22, 2011	Correspondence	BLM Letter to Viejas Tribal Chairman, Anthony R. Pico, responding to the Tribe's request for information specific to the OWEF project as well as general information about renewable energy projects in Southern California, particularly those in the BLM's desert district.

Table 5-1. Significant Events in the BLM Consultation Process

Date	Type	Content
January 5, 2012	Section 106 Consulting Parties Meeting	Group meeting to discuss and obtain input on the BLM's determinations of eligibility, findings of effect, and the content of the MOA.
January 10, 2012	Correspondence	BLM Letter to Quechan Tribal Council Member, Virgil Smith, requesting help in scheduling a government-to-government meeting with the Quechan Tribal Council.
January 27, 2012	Correspondence	BLM Letter to Indian tribes requesting continued government-to-government consultation, providing an update on the project, and inviting tribal members to two upcoming Section 106 group meetings being held on February 9, 2012, and March 7, 2012. The purpose of the meetings was stated to provide information on recent developments with the project and to seek input on treatment and mitigation to be included in the MOA. The letter also indicates that the date targeted for the Record of Decision (ROD) has been modified from February to May 2012 to allow for continued consultation. BLM indicated that the Applicant will present a reduced footprint project that specifically addresses some of the concerns raised by the Tribes during the 106 process. Maps of the proposed turbine reductions were included with the letters and feedback was requested. The letter concluded with an invitation for additional site tours for those who are interested and requested that convenient dates for the Tribe be suggested. The letter was accompanied by a milestone schedule that shows key upcoming dates for the project with respect to the BLM's evaluation of the Project's ROW application and continuation of the 106 process.
February 9, 2012	Section 106 Consulting Parties Meeting	Group meeting to obtain input on avoidance ideas, treatment and mitigation to be included in the MOA. Project applicant presentation of 112 turbine reduced project footprint that sought to address concerns raised during Section 106 consultation. Review of project milestone schedule.
February 13, 2012	Correspondence	Email to Indian tribes and consulting parties inviting them to attend a meeting on either March 12 or another date in addition to the meeting being held on March 7 due to the fact that some representatives indicated that they were not being available on March 7. Additionally, the email re-extends an invitation for further site tours to visit archaeological sites and/or proposed facilities' locations. Those interested were encouraged to contact the BLM and provide dates that they are available.
February 27, 2012	Correspondence	BLM Letter to Indian tribes requesting continued government-to-government consultation, providing an update on the project and inviting tribal members to two upcoming Section 106 group meetings being held on March 7, 2012, and March 12, 2012. The letters also provided the BLM's revised Section 106 findings and determinations and the revised MOA for a 30 day consultation period. The purpose of the meetings was stated to discuss the revised MOA and to seek further input on it and its Appendices including the treatment and mitigation measures provided for in the HPTP. The letter also indicates that the dates targeted for the Record of Decision (ROD) have not been modified with the delay in publication of the Final EIS. The letter concluded with an offer to meet individually with Tribes on a government-to-government basis at any time to discuss the revised Section 106 determinations, the revised draft MOA, and/or any other issues.
February 27, 2012	Document	Provided Indian tribes copies of the revised Draft MOA for review and comment.

In addition to the Section 106 consulting parties meetings identified in the table above, numerous individual government-to-government meetings have taken place between the BLM and individual tribes. While the Section 106 consulting party group meetings provide a forum for presenting project updates, presenting the results of cultural resources studies, and open discussion and sharing of ideas about information and concerns with the proposed undertaking, the individual government-to-government meetings with Indian tribes provide a forum for tribes to share information and concerns in an individual context, apart from other consulting parties and about other issues not necessarily related to the Section 106 process. The names of tribes and the dates of the meetings as well as the names of some the tribal members present during these meetings are documented in Tables 5.2 through 5.4. Further description of the information and major concerns brought to light through the correspondence as well shared during group and individual meetings with tribes is discussed below. Following that summary is a discussion of the actions that have been undertaken during the consultation process to address tribal concerns. The potential measures proposed to respond to tribal views with respect to the proposed project, should it be approved, are also discussed.

Consultation with Indian tribes, and discussions with tribal organizations and individuals has revealed very strong concern about the project and the impacts it would cause under all of the build alternatives. They have stated during meetings and in written correspondence their perception of the importance and sensitivity of cultural resources within and near the OWEF project area. Many Tribes have told the BLM that they attach religious and cultural significance to the project area and the broader landscape and some have proposed that the project area is part of a larger TCP that encompasses the project site and surrounding area. They view the high density of resources as interrelated and consider the area as a whole to be sacred. During consultation, multiple Tribes expressed their direct opposition to the project including the Campo Band of Mission Indians, Kwaaymii Laguna Band of Indians, Manzanita Band of Kumeyaay Indians, Quechan Indian Tribe, San Pasqual Band of Diegueno Indians and the Viejas Band of Kumeyaay Indians. The Southern California Tribal Chairmen's Association has also sent the BLM a resolution in opposition to the OWEF project (No. 2012-02), dated January 24, 2012.

The SCTCA's resolution states that they are opposed to the project due to the fact that it "lies within a rich landscape that is culturally and religiously significant to the SCTCA member tribes and if constructed, the proposed project will cause irreparable harm to those tribes and resources of great cultural value to them." Their earlier resolution, No. 2011-13 dated November 22, 2011, further explains that:

> "[T]he SCTCA member Tribes have continuing cultural and religious associations with the lands subject to effect by the OWEP including their natural and cultural features, their plants and animals, the ancestral human remains interred therein, and the vistas across the valley and into the surrounding foothills and mountains..."

In November 2011, the Viejas Band of Kumeyaay Indians provided the BLM with Tribal Council Resolution No. 112311B which stated that the project area is encompassed by a TCP that should be recognized as an Indian Sacred Site under Executive Order 13007 and should also be considered eligible for listing on the NRHP under Section 106. They provided a map with an outline of its proposed boundaries.

Specific to the TCP discussion, some Tribes have indicated that certain geological features including Coyote Mountain and Signal Mountain (Little *Wii Shpaa* or Little Eagle Mountain in the Cocopah language), which are outside the ROW application, and Sugarloaf Mountain, which is within the ROW application area, hold significant value. Specifically, concern about impacts to the view shed towards important cultural locations, as well as impacts to the viewshed from the Spoke Wheel Geoglyph and other geoglyphs and sites of traditional and religious importance. The Cocopah Indian Tribe has expressed in government-to-government meetings that Signal Mountain is a sacred corner marker in their belief system that the area from the project to Signal Mountain was part of a corridor used by the Cocopah people, and that Signal Mountain forms part of their strong connection to the land and power is received from it.

A letter from Viejas Tribal Chairman Anthony Pico dated December 27, 2011, to State Director Jim Kenna explained:

> "The proposed project area is a culturally and religiously significant landscape valued by the Kumeyaay, Cocopah and Quechan peoples. It is rich with evidence of our use and occupation, and we maintain a spiritual connection to the landscape, its plants, animals, views and natural features which include not one but three spiritually significant mountains: Coyote Mountain, Signal Mountain and Sugarloaf Mountain.
>
> Our knowledge of who we are and where we come from is passed along in songs, stories and ceremonies that originate from and reference the Ocotillo area. We tell those stories, sing those songs and practice those ceremonies today. The project area is a teaching place, where we teach the youth our traditions and spiritual practices. Our concerns are about much more than simply avoiding archaeological sites, which were identified by a paid archaeological consultant. Proper consultation and analysis of this area, had it been conducted, would have and should have included tribal views and values. To date those views have been ignored and no effort has been made to correct that. This landscape, given that it is the origin of certain songs and ceremonies, and that it contains places integral to our language and stories, is invaluable to us. The proposed project in each of its forms, including a reduction in turbine number, will have serious and irreparable impacts to this landscape and to the tribes' cultural and religious practices. There is no mitigation that can make up for that. We are not opposed to renewable energy; we are opposed to this project in this place…"

Vice-President Ronda Aguerro of the Quechan Indian Tribe in a letter to the BLM dated December 9, 2011, states that the cultural resources found in the OWEF project area:

> "[R]eflect the repeated, annual migration of the Quechan, and other Yuman Tribes, as they exercised cultural, spiritual/religious, and utilitarian practices in that area. The OD (Ocotillo Desert) is part of the traditional Western Corridor for the Quechan Tribe and it is also an area of transition between the Quechan, Cocopah, Kumeyaay and Kamia/Desert Kumeyaay."

Her letter goes on to also explain:

> "The area of the OD holds tremendous spiritual essence for the Quechan Tribe. The APE lies at the bottom of Coyote Mountain (Carrizo Mountain), which is an important cultural component to the Quechan cosmology. The importance of that mountain is recounted and held sacred in our Creation Story, songs, and other oral traditions. To allow a project of such magnitude to be erected next to one of our sacred sites-which helps form our identity as Quechan-would be a desecration to our culture and way of life."
>
> The Manzanita Band of Kumeyaay expressed their concerns about the OWEF project to Secretary of the Interior Ken Salazar in the following way by letter dated September 29, 2011, from Chairman Leroy Elliott:
>
> > "We respectfully request you to consider that the Kumeyaay people do not record or maintain our history in books and libraries as the white man culture does. We Native Americans record our history on the land where we lived, at the sacred sites where we prayed, and in the communities where we coexisted in harmony with the cultural and environmental landscape. Our people have maintained this way for ten thousand years and it is only in the past two hundred years that we were forced to abandon our way of life as a means of survival….

> The vast majority of our heritage history evidencing that our people lived here in the region for over 10 millenniums is now gone due to the development of these prime real estate locations.. All that remains of our history lies in the few remote areas of McCain Valley, Jacumba, and Ocotillo.....
>
> It is on this land in McCain Valley, Jacumba, and Ocotillo where our ancestral people lived, worked, worshiped, sang, danced, and died. It is on this land that our people were cremated ceremoniously and our family bones are placed undisturbed on the land, hopefully for all time. Now, approval of your three priority projects will destroy in one generation what took hundreds, even thousands of generations to establish... All for technology that could well be antiquated within just one twenty-year generation. Let us not rush ahead be so foolish. McCain Valley, Ocotillo, and Jacumba, are all three Traditional Cultural Properties and the last of our Kumeyaay major heritage sites. We request that Cultural Conservation Easements be establish so that the general public has restricted access and these sacred communities can be again preserved for our Native citizens to ceremonially enjoy without energy project structures...
>
> Placing wind turbines and transmission lines between your described and limited archaeological sites desecrates the ancestral communities that were established and in practice long before your written history. Using your science to define and describe our historic cultural communities and spiritual concepts is another example of how your government dishonors ours. These Native American homelands are Traditional Cultural Properties that are cherished and should be protected..."

In a letter to BLM Archaeologist Carrie Simmons, dated May 16, 2010, Ms. Carmen Lucas of the Kwaaymii Laguna Band of Indians provided a list of her concerns regarding the preservation and protection of cultural resources within the desert in the face of increasing renewable energy development. She asked that among other things, "the small fragmented remains (to include Human Remains) that tell the prehistory of the people who knew how to live and move with the rhythm of this environment for thousands of years without destroying it not be impacted", and that "the intangible view sheds that help tell the sacred legends not be obstructed or impacted."

In a letter to BLM El Centro Field Manager Vicki Wood, dated March 23, 2007, on the meteorological towers proposed for wind testing in the OWEF area, Ms. Lucas provided comments that the "visual quality and the essence of those properties cannot be mitigated and the public is better served if such places are left alone and preserved for future generations." In her letter, Ms. Lucas also stated concern that should the testing project be allowed, the area would fail to "retain any of those special places that one goes to experience the sense of discovery, or to visit their creator and to hear the legends of their ancestors." Further, Ms. Lucas stated "It should be understood that what makes up the sacred can and most often is the visual quality and the quietness that is often part of that visual quality of place" and that "the visual impact of the Wind Hunter Ocotillo Met Tower will have a destructive adverse effect on the Intangible Cultural Resource."

To support her concerns, Lucas shared the legend of *Huta-pah*, which tells the story of a father's cremation ritual, and the journey his son (*Huta-pah*) took to reunite his father's heart with the desert valleys and mountains nearby. The legend, relayed to Mary E. Johnson by Maria Alto of the Laguna

Band of Indians of Laguna Mountain (ca. 1914), was passed on to Ms. Lucas by her father Tom Lucas (Ms. Alto's son). Mr. Lucas explained Coyote Mountain is where *Huta-pah* carried his father's heart. Recently, as part of the comments provided on the DEIS/DEIR, Ms. Lucas shared another document, one that she had prepared titled *Wiipuk Uun'Yaw = Desert Trails A Life Style of the Old Ones*. It expressively summarized the continued traditional use of the project area and the surrounding region through a description of the stories and knowledge she had accumulated over the years that had been passed on to her from her ancestors and knowledge she had gained through interacting with the resources and the tribal people who still utilized the project area.

As indicated by the discussion above, in addition to sharing information about the TCP and the connected nature of the cultural resources within and beyond the project area, several Tribes have indicated that they attach sacred, religious, and cultural significance to the cremations/burials that have been identified within the APE for the project. The letter dated December 9, 2011, from the Vice President of the Quechan Indian Tribe states that "[b]y virtue of the fact alone that cremation sites exist within the APE make the area sufficiently hallowed that any disturbance in that area would not only be improper but sacrilegious in nature." These cremations are recognized by Tribes as being part of the TCP along with trails and other tribally significant sites such as the geoglyphs, rock features and habitation locations. Tribes have also expressed concerns about the potential for additional unknown cremations/burials and other unknown significant resources which may be located within the project area but are as yet undiscovered.

Finally, various Tribes expressed concern about the potential for indirect impacts from the OWEF project to cultural resources through the destruction of the desert crusts associated with project-related construction and erosion, and the potential for resource impacts if there is increased use by off-road enthusiasts and access to vandals and looting.

In a letter to BLM El Centro Field Office Resources Branch Chief Daniel Steward dated March 1, 2010, David Toler, Tribal Council Member of the San Pasqual Band of Diegueño Indians, stated:

> "Regarding impacts to Cultural Resources, The Band is very concerned with impacts on Archaeological resources and the related destruction to the Indigenous Cultural Landscape. The proposed impacts to our Cultural Landscape can be equated to severe damage to our Traditional Kumeyaay/Hokan religious freedom. If this project is approved by the BLM, Sacred Site privacy and sanctity will certainly be destroyed. This is due to additional roads, construction disturbances, and increased continuous human impact. On the grounds that this project has a negative impact on our Indigenous religious freedoms, we oppose disturbance of traditional Cremation Grounds, and all Cultural Resources in and adjacent to the proposed project."

Other general concerns expressed by Indian tribes during consultation are a strong dissatisfaction with the project's environmental review timelines, their relationship to the Section 106 processes, and overall coordination. Many tribes feel that they were not given adequate time to review and properly comment on the necessary documents and that because of this the consultation process has not been a meaningful one. Some tribes expressed concern about impacts to the tribally important plants and animals within the project area and described that they also form an integral part of the traditional landscape. Similarly, many Tribes expressed concern that the October 2011 draft archaeological report did not adequately address tribal values about the area and that the survey methodology was flawed. It should be noted, however, that one tribe, the Ewiiaapaayp Band of Kumeyaay Indians, expressed satisfaction with the consultation process and the efforts that the applicant has made to avoid physically affecting the archaeological resources. They have expressed support for the project.

In response to these concerns and issues, the BLM has carefully considered the information shared and the concerns of the Indian tribes. It has incorporated the same into the decision-making process concerning historic properties and adverse effects to them, as well as the analysis of cultural resources for NEPA purposes. From early on in the consultation processes, the BLM responded to the feedback it received from the various tribes concerning the traditional cultural and religious significance ascribed to the area and the cultural resources. The BLM encouraged the archaeological contractors to contact the tribes that the BLM was consulting with on the project and invite them to participate in the archaeological survey to help facilitate information sharing and consultation on the importance of resources in the OWEF APE. During the survey the BLM also encouraged the project applicant to re-design the OWEF to avoid physically affecting all of the archaeological sites that were identified. Similarly, in response to tribal concerns about the important relationship between sites, such as the Spoke Wheel Geoglyph and Signal and Coyote Mountains, and the information about the religious and cultural significance associated with cremations, the Refined Project configuration was developed, and is currently under consideration as stated above. The Refined Project removes 43 turbines from the project footprint to avoid obstruction of the main viewsheds from the site. The BLM has identified this refined configuration as its preferred alternative.

As part of its consultation under Section 106, AIRFA, and Executive Order 13175 the BLM acknowledges the traditional importance and value of the TCP and the surrounding landscape as an integral part of tribes' history and continuing culture. However, the BLM has not received detailed information about the whole landscape identified by the tribes, sufficient to allow it to assess its eligibility for the National Register, as it is required to due under Section 106. Based on the information received, the BLM assumes the portion of the TCP within the project area is eligible under Criterion A of the National Register for its traditional and cultural significance, and the BLM continues to seek information from tribes about additional measures that could be implemented to protect, minimize and avoid impacts to the TCP beyond the additional reductions in project layout made under the Refined Project.

Table 5-2. Tribal Consultation between February 2010 and August 2011

Tribal Contact	BLM Letter to Tribes 2/4/10	BLM Letter to Tribes 7/28/10	BLM Letter to Tribes 11/12/10	Gov. to Gov. Meeting with Manzanita 1/7/11	Gov. to Gov. Meeting with Campo 2/10/11	BLM Letter to Tribes 4/8/11	Section 106 Consulting Party Mtg. and Field Trip 5/12/11	Gov. to Gov. Mtg. with Cocopah 7/12/11	BLM Letter to the Quechan Culture Committee 7/15/11	BLM Letter to Viejas 7/27/11	Gov. to Gov. Meeting with Ewiiaapaayp 7/29/11	Gov. to Gov. Meeting with Manzanita 8/5/11	Gov. to Gov. Meeting with Campo, La Posta, Manzanita and Viejas 8/8/11	BLM Letter to Tribes 8/11/11	Gov. to Gov. Meeting and Field Trip 8/26/11
Mr. Edwin Romero, Chairman, Barona Band of Mission Indians		Yes	Yes			Yes								Yes	
Ms. Bernice Paipa, La Posta/Kumeyaay Cultural Repatriation Committee Representative		Yes-cc	Yes-cc			Yes-cc	Yes							Yes-cc	
Ms. Shiela Alvarez, Barona Band of Mission Indians		Yes-cc	Yes-cc			Yes-cc								Yes-cc	
Ms. Monique LaChappa, Chairwoman, Campo Band of Mission Indians	Yes	Yes	Yes		Yes	Yes							Yes	Yes	
Ms. Lisa Gover, Tribal Administrator (Former), Campo Band of Mission Indians	Yes-cc	Yes-cc													
Ms. Andrea Najera, Cultural Resource Mgr., Campo Band of Mission Indians														Yes-cc	
Ms. Melissa Estes, Director: Campo EPA, Campo Band of Mission Indians					Yes	Yes-cc									
Mr. Harry Paul Cuero, Campo Band of Mission Indians	Yes-cc						Yes								
Mr. Frank J. Salazar III, Campo Band of Mission Indians		Yes-cc	Yes-cc			Yes-cc									
Ms. Sherry Cordova, Chairwoman, Cocopah Indian Tribe	Yes	Yes	Yes			Yes								Yes	
Mr. Dale Philips, Vice Chairman, Cocopah Indian Tribe								Yes							
Mrs. Jill McCormick, Cultural Resources Mgr., Cocopah Indian Tribe	Yes-cc	Yes-cc	Yes-cc			Yes-cc	Yes	Yes						Yes-cc	

Table 5-2. Tribal Consultation between February 2010 and August 2011

Tribal Contact	BLM Letter to Tribes 2/4/10	BLM Letter to Tribes 7/28/10	BLM Letter to Tribes 11/12/10	Gov. to Gov. Meeting with Manzanita 1/7/11	Gov. to Gov. Meeting with Campo 2/10/11	BLM Letter to Tribes 4/8/11	Section 106 Consulting Party Mtg. and Field Trip 5/12/11	Gov. to Gov. Mtg. with Cocopah 7/12/11	BLM Letter to the Quechan Culture Commitee 7/15/11	BLM Letter to Viejas 7/27/11	Gov. to Gov. Meeting with Ewiiaapaayp 7/29/11	Gov. to Gov. Meeting with Manzanita 8/5/11	Gov. to Gov. Meeting with Campo, La Posta, Manzanita and Viejas 8/8/11	BLM Letter to Tribes 8/11/11	Gov. to Gov. Meeting and Field Trip 8/26/11
Mr. Robert Pinto, Sr., Chairman, Ewiiaapaayp Band of Kumeyaay Indians	Yes, but no Return Receipt	Yes	Yes, Letter Returned			Yes					Yes			Yes	
Mr. Michael Garcia, Vice Chairman, Ewiiaapaayp Band of Kumeyaay Indians	Yes-cc, but no Return Receipt	Yes-cc, but no Return Receipt				Yes-cc					Yes			Yes-cc	
Mr. Will Micklin, Executive Director & Chief Operating Officer, Ewiiaapaayp Band of Kumeyaay Indians	Yes-cc, but no Return Receipt	Yes-cc, but no Return Receipt	Yes-cc			Yes-cc					Yes			Yes-cc	
Mr. Desiderio Vela, Environmental Program Manager, Ewiiaapaayp Band of Kumeyaay Indians							Yes								
Mr. Keeny Escalanti Sr., President, Fort Yuma Quechan Indian Tribe														Yes	
Mr. Michael Jackson, Sr., President (Former), Fort Yuma Quechan Indian Tribe	Yes	Yes	Yes			Yes									
Mr. Virgil Smith, Tribal Council Member, Fort Yuma Quechan Indian Tribe															
Mrs. Bridget Nash-Chrabascz, Historic Preservation Officer (Former), Fort Yuma Quechan Indian Tribe	Yes-cc	Yes-cc	Yes-cc			Yes-cc, but no Return Receipt	Yes							Yes-cc	
Mr. John Bathke, Historic Preservation Officer, Fort Yuma Quechan Indian Tribe															Yes

Table 5-2. Tribal Consultation between February 2010 and August 2011

Tribal Contact	BLM Letter to Tribes 2/4/10	BLM Letter to Tribes 7/28/10	BLM Letter to Tribes 11/12/10	Gov. to Gov. Meeting with Manzanita 1/7/11	Gov. to Gov. Meeting with Campo 2/10/11	BLM Letter to Tribes 4/8/11	Section 106 Consulting Party Mtg. and Field Trip 5/12/11	Gov. to Gov. Mtg. with Cocopah 7/12/11	BLM Letter to the Quechan Culture Committee 7/15/11	BLM Letter to Viejas 7/27/11	Gov. to Gov. Meeting with Ewiiaapaayp 7/29/11	Gov. to Gov. Meeting with Manzanita 8/5/11	Gov. to Gov. Meeting with Campo, La Posta, Manzanita and Viejas 8/8/11	BLM Letter to Tribes 8/11/11	Gov. to Gov. Meeting and Field Trip 8/26/11
Ms. Pauline Jose, Cultural Committee Chair, Fort Yuma Quechan Indian Tribe									Yes						
Mr. Lorey Cachora, Fort Yuma Quechan Indian Tribe		Yes-cc													Yes
Mr. Preston Arrow-Weed, Ah-Mut Pipa Foundation/Fort Yuma Quechan Indian Tribe	Yes-cc	Yes-cc													
Mr. Raymond Hunter, Chairman, Jamul Indian Village															
Mr. Kenneth Meza, Sr., Chairman (Former), Jamul Indian Village		Yes	Yes			Yes								Yes	
Ms. Carlene A. Chamberlain, Executive Councilwoman, Jamul Indian Village		Yes-cc	Yes-cc			Yes-cc								Yes-cc	
Mr. Jesse Pinto, Jamul Indian Village		Yes-cc				Yes, Letter returned	Yes								
Ms. Carmen Lucas, Kwaaymii Laguna Band of Indians	Yes	Yes	Yes			Yes	Yes						Yes	Yes	
Ms. Courtney Ann Coyle, Outside Legal Counsel for the Viejas and Kwaaymii							Yes								
Ms. Gwendolyn Parada, Chairperson, La Posta Band of Kumeyaay Indians	Yes	Yes	Yes			Yes							Yes	Yes	
Mr. Leroy Elliott, Chairman, Manzanita Band of Kumeyaay Indians	Yes	Yes	Yes	Yes		Yes						Yes	Yes	Yes	
Ms. Angela Santos, Tribal Council Member, Manzanita Band of Kumeyaay Indians				Yes								Yes	Yes		
Mr. John Elliott, Tribal Council Member, Manzanita Band of Kumeyaay Indians				Yes								Yes	Yes		

Table 5-2. Tribal Consultation between February 2010 and August 2011

Tribal Contact	BLM Letter to Tribes 2/4/10	BLM Letter to Tribes 7/28/10	BLM Letter to Tribes 11/12/10	Gov. to Gov. Meeting with Manzanita 1/7/11	Gov. to Gov. Meeting with Campo 2/10/11	BLM Letter to Tribes 4/8/11	Section 106 Consulting Party Mtg. and Field Trip 5/12/11	Gov. to Gov. Mtg. with Cocopah 7/12/11	BLM Letter to the Quechan Culture Committee 7/15/11	BLM Letter to Viejas 7/27/11	Gov. to Gov. Meeting with Ewiiaapaayp 7/29/11	Gov. to Gov. Meeting with Manzanita 8/5/11	Gov. to Gov. Meeting with Campo, La Posta, Manzanita and Viejas 8/8/11	BLM Letter to Tribes 8/11/11	Gov. to Gov. Meeting and Field Trip 8/26/11
Mr. Jeff Riolo, Legal Counsel for Manzanita			Yes-cc	Yes		Yes-cc	Yes					Yes	Yes	Yes-cc	Yes
Mr. Nick Elliot, Environmental Manager, Manzanita Band of Kumeyaay Indians	Yes-cc	Yes-cc	Yes-cc				Yes								
Mr. Mark Romero, Chairman, Mesa Grande Band of Mission Indians		Yes	Yes			Yes								Yes	
Mr. Allen Lawson, Jr., Chairman, San Pasqual Band of Dieguenо Indians	Yes	Yes	Yes			Yes								Yes	
Mr. David Toler, Tribal Council Member, San Pasqual Band of Dieguenо Indians	Yes-cc	Yes-cc				Yes-cc								Yes-cc	
Ms. Kristie Orosco, Environmental Director, San Pasqual Band of Dieguenо Indians		Yes-cc	Yes-cc			Yes-cc								Yes-cc	
Mr. Virgil Perez, Chairman, Santa Ysabel Band of Dieguenо Indians						Yes								Yes	
Mr. Johnny Hernandez, Chairman (Former), Santa Ysabel Band of Dieguenо Indians	Yes	Yes	Yes												
Mr. Clint Linton, Santa Ysabel Band of Dieguenо Indians	Yes-cc	Yes-cc	Yes-cc			Yes-cc								Yes-cc	
Mr. Daniel Tucker, Chairman, Sycuan Band of Kumeyaay Nation		Yes	Yes			Yes								Yes	
Mr. Jamie LaBrake, Tribal Council Member, Sycuan Band of Kumeyaay Nation															
Ms. Mary L. Resvaloso, Chairwoman, Torres-Martinez Desert Cahuilla Indians	Yes	Yes	Yes			Yes								Yes	

Table 5-2. Tribal Consultation between February 2010 and August 2011

Tribal Contact	BLM Letter to Tribes 2/4/10	BLM Letter to Tribes 7/28/10	BLM Letter to Tribes 11/12/10	Gov. to Gov. Meeting with Manzanita 1/7/11	Gov. to Gov. Meeting with Campo 2/10/11	BLM Letter to Tribes 4/8/11	Section 106 Consulting Party Mtg. and Field Trip 5/12/11	Gov. to Gov. Mtg. with Cocopah 7/12/11	BLM Letter to the Quechan Culture Committee 7/15/11	BLM Letter to Viejas 7/27/11	Gov. to Gov. Meeting with Ewiiaapaayp 7/29/11	Gov. to Gov. Meeting with Manzanita 8/5/11	Gov. to Gov. Meeting with Campo, La Posta, Manzanita and Viejas 8/8/11	BLM Letter to Tribes 8/11/11	Gov. to Gov. Meeting and Field Trip 8/26/11
Ms. Diana Chihuahua, Cultural Resources, Torres-Martinez Desert Cahuilla Indians	Yes-cc	Yes-cc	Yes-cc			Yes-cc								Yes-cc	
Mr. Bobby Barrett, Chairman (Former), Viejas Band of Kumeyaay Indians		Yes	Yes												
Mr. Anthony Pico, Chairman, Viejas Band of Kumeyaay Indians						Yes				Yes, but no Return Receipt			Yes	Yes	
Mr. Greybuck Espinoza, Tribal Council Member, Viejas Band of Kumeyaay Indians															Yes
Mr. Raymond Bear Cuero, Tribal Council Member, Viejas Band of Kumeyaay Indians															Yes
Ms. Lisa Haws, Land Use Manager (Former), Viejas Band of Kumeyaay Indians		Yes-cc	Yes-cc			Yes-cc	Yes			Yes-cc				Yes-cc	
Ms. Kim Mettler, Director of Legal Affairs, Viejas Band of Kumeyaay Indians										Yes-cc			Yes		Yes
Mr. Frank Brown, Viejas Band of Kumeyaay Indians/KCRPC Chairman							Yes						Yes		Yes

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Mr. Edwin Romero, Chairman, Barona Band of Mission Indians	Yes					Yes-no Return Receipt						Yes	Yes-no Return Receipt						
Ms. Bernice Paipa, La Posta/Kumeyaay Cultural Repatriation Committee Representative	Yes-cc					Yes-cc, no Return Receipt						Yes-cc	Yes-cc, no Return Receipt				Yes		
Ms. Shiela Alvarez, Barona Band of Mission Indians	Yes-cc					Yes-cc, no return Receipt						Yes-cc	Yes-cc, no Return Receipt						
Ms. Monique LaChappa, Chairwoman, Campo Band of Mission Indians	Yes					Yes						Yes	Yes						
Ms. Lisa Gover, Tribal Administrator (Former), Campo Band of Mission Indians																			
Ms. Andrea Najera, Cultural Resource Manager, Campo Band of Mission Indians	Yes-cc					Yes-cc						Yes-cc	Yes-cc				Yes		
Ms. Melissa Estes, Director: Campo EPA, Campo Band of Mission Indians						Yes-cc							Yes-cc						
Mr. Harry Paul Cuero, Campo Band of Mission Indians																	Yes		

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Mr. Frank J. Salazar III, Campo Band of Mission Indians																			
Ms. Sherry Cordova, Chairwoman, Cocopah Indian Tribe			Yes	Yes		Yes						Yes	Yes						
Mr. Dale Philips, Vice Chairman, Cocopah Indian Tribe			Yes																Yes
Mrs. Jill McCormick, Cultural Resources Manager, Cocopah Indian Tribe			Yes	Yes-cc		Yes-cc						Yes-cc	Yes-cc				Yes		Yes
Mr. Robert Pinto, Sr., Chairman, Ewiiaapaayp Band of Kumeyaay Indians	Yes					Yes						Yes	Yes-Emailed						
Mr. Michael Garcia, Vice Chairman, Ewiiaapaayp Band of Kumeyaay Indians	Yes-cc					Yes-cc							Yes-cc-Emailed						
Mr. Will Micklin, Executive Director & Chief Operating Officer, Ewiiaapaayp Band of Kumeyaay Indians	Yes-cc					Yes-cc						Yes-cc	Yes-cc-Emailed						
Mr. Desiderio Vela, Environmental Program Manager, Ewiiaapaayp Band of Kumeyaay Indians																			
Mr. Keeny Escalanti Sr., President, Ft. Yuma Quechan Indian Tribe	Yes					Yes						Yes	Yes						

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Mr. Michael Jackson, Sr., President (Former), Ft. Yuma Quechan Indian Tribe																			
Mr. Virgil Smith, Tribal Council Member, Ft. Yuma Quechan Indian Tribe																			
Mrs. Bridget Nash-Chrabascz, Historic Preservation Officer (Former), Ft. Yuma Quechan Indian Tribe																			
Mr. John Bathke, Historic Preservation Officer, Ft. Yuma Quechan Indian Tribe																Yes			
Ms. Pauline Jose, Cultural Committee Chair, Ft. Yuma Quechan Indian Tribe																			
Mr. Lorey Cachora, Ft. Yuma Quechan Indian Tribe																Yes			
Mr. Preston Arrow-Weed, Ah-Mut Pipa Foundation/ Ft. Yuma Quechan Indian Tribe																			
Mr. Raymond Hunter, Chairman, Jamul Indian Village																			

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Mr. Kenneth Meza, Sr., Chairman (Former), Jamul Indian Village	Yes					Yes						Yes	Yes						
Ms. Carlene A. Chamberlain, Executive Councilwoman, Jamul Indian Village	Yes-cc					Yes-cc						Yes-cc	Yes-cc						
Mr. Jesse Pinto, Jamul Indian Village	Yes-cc Letter returned					Yes-cc Letter returned													
Ms. Carmen Lucas, Kwaaymii Laguna Band of Indians	Yes					Yes							Yes			Yes			
Ms. Courtney Ann Coyle, Outside Legal Counsel for the Viejas and Kwaaymii	Yes-cc					Yes-cc		Yes					Yes-cc						
Ms. Gwendolyn Parada, Chairperson, La Posta Band of Kumeyaay Indians	Yes					Yes						Yes	Yes						
Mr. Leroy Elliott, Chairman, Manzanita Band of Kumeyaay Indians	Yes	Yes				Yes	Yes					Yes	Yes		Yes				
Ms. Angela Santos, Tribal Council Member, Manzanita Band of Kumeyaay Indians		Yes					Yes								Yes				
Mr. John Elliott, Tribal Council Member, Manzanita Band of Kumeyaay Indians		Yes					Yes								Yes				

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Mr. Jeff Riolo, Legal Counsel for Manzanita	Yes-cc	Yes				Yes-cc	Yes					Yes-cc	Yes-cc		Yes				
Mr. Nick Elliot, Environmental Manager, Manzanita Band of Kumeyaay Indians																			
Mr. Mark Romero, Chairman, Mesa Grande Band of Mission Indians	Yes					Yes						Yes	Yes						
Mr. Allen Lawson, Jr., Chairman, San Pasqual Band of Dieguено Indians	Yes					Yes						Yes	Yes						
Mr. David Toler, Tribal Council Member, San Pasqual Band of Dieguено Indians	Yes-cc					Yes-cc						Yes-cc	Yes-cc						
Ms. Kristie Orosco, Environmental Director, San Pasqual Band of Dieguено Indians	Yes-cc					Yes-cc						Yes-cc	Yes-cc						
Mr. Virgil Perez, Chairman, Santa Ysabel Band of Dieguено Indians	Yes					Yes						Yes	Yes						
Mr. Johnny Hernandez, Chairman (Former), Santa Ysabel Band of Dieguено Indians																			
Mr. Clint Linton, Santa Ysabel Band of Dieguено Indians	Yes-cc					Yes-cc						Yes-cc	Yes-cc						

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Mr. Daniel Tucker, Chairman, Sycuan Band of Kumeyaay Nation	Yes					Yes			Yes			Yes	Yes						
Mr. Jamie LaBrake, Tribal Council Member, Sycuan Band of Kumeyaay Nation									Yes				Yes-cc				Yes		
Ms. Mary L. Resvaloso, Chairwoman, Torres-Martinez Desert Cahuilla Indians	Yes					Yes						Yes	Yes						
Ms. Diana Chihuahua, Cultural Resources, Torres-Martinez Desert Cahuilla Indians	Yes-cc					Yes-cc						Yes-cc	Yes-cc						
Mr. Bobby Barrett, Chairman (Former), Viejas Band of Kumeyaay Indians																			
Mr. Anthony Pico, Chairman, Viejas Band of Kumeyaay Indians					Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes				Yes	
Mr. Greybuck Espinoza, Tribal Council Member, Viejas Band of Kumeyaay Indians																Yes			
Mr. Raymond Bear Cuero, Tribal Council Member, Viejas Band of Kumeyaay Indians																Yes	Yes		

Table 5-3. Tribal Consultation between September 2011 and December 2011

Tribal Contact	BLM Letter to Tribes 9/14/11	Gov. to Gov. Meeting with Manzanita 9/16/11	Gov. to Gov. Meeting with Cocopah 9/27/11	BLM Letter to Cocopah 9/29/11	BLM Letter to Viejas 10/5/11	BLM Letter to Tribes 10/5/11	Gov. to Gov. Meeting with Manzanita 10/20/11	Gov. to Gov. Meeting with Viejas 10/20/11	Gov. to Gov. Meeting with the Sycuan 10/21/11	BLM Letter to Viejas 11/1/11	BLM Letter to Viejas 11/17/11	BLM Letters to Tribes 11/18/11	BLM Letter to Tribes 11/23/11	Gov. to Gov. Meeting with the Viejas 11/28/11	Gov. to Gov. Meeting with Manzanita 11/29/11	Gov. to Gov. Meeting with the Viejas 12/5/11	Section 106 Consulting Party Meeting 12/14/11	BLM Letter to Viejas 12/22/11	Gov. to Gov. Meeting with Cocopah 12/27/11
Ms. Lisa Haws, Land Use Manager (Former), Viejas Band of Kumeyaay Indians																			
Ms. Kim Mettler, Director of Legal Affairs, Viejas Band of Kumeyaay Indians						Yes-cc		Yes			Yes-cc emailed	Yes-cc	Yes-cc				Yes	Yes-cc	
Mr. Frank Brown, Viejas Band of Kumeyaay Indians/KCRPC Chairman																	Yes		

Table 5.4 Tribal Consultation between January 2012 and February 2012

Tribal contact	Section 106 Consulting Party Meeting 01/05/2012	BLM Letter to Quechan 01/10/12	Gov. to Gov. Meeting with Viejas 01/23/2012	BLM Letter to Tribes 01/27/2012	Gov. to Gov. Meeting with Quechan 01/31/2012	Section 106 Consulting Party Meeting 02/09/2012	Gov. to Gov. Meeting with Viejas 02/21/2012	Gov. to Gov. Meeting with the Quechan 02/22/2012	BLM Letter to Tribes 02/27/2012
Mr. Edwin Romero, Chairman, Barona Band of Mission Indians				Yes					Yes
Ms. Bernice Paipa, La Posta/Kumeyaay Cultural Repatriation Committee Representative				Yes-cc					Yes-cc
Ms. Shiela Alvarez, Barona Band of Mission Indians				Yes-cc					Yes-cc
Ms. Monique LaChappa, Chairwoman, Campo Band of Mission Indians				Yes					Yes
Ms. Lisa Gover, Tribal Administrator (Former), Campo Band of Mission Indians									
Ms. Andrea Najera, Cultural Resource Manager, Campo Band of Mission Indians				Yes-cc					Yes-cc
Ms. Melissa Estes, Director: Campo EPA, Campo Band of Mission Indians				Yes-cc					Yes-cc
Mr. Harry Paul Cuero, Campo Band of Mission Indians									
Mr. Frank J. Salazar III, Campo Band of Mission Indians									
Ms. Sherry Cordova, Chairwoman, Cocopah Indian Tribe				Yes					Yes
Mr. Dale Philips, Vice Chairman, Cocopah Indian Tribe	Yes								
Mrs. Jill McCormick, Cultural Resources Manager, Cocopah Indian Tribe	Yes			Yes-cc		Yes			Yes-cc
Mr. Robert Pinto, Sr., Chairman, Ewiiaapaayp Band of Kumeyaay Indians				Yes					Yes
Mr. Michael Garcia, Vice Chairman, Ewiiaapaayp Band of Kumeyaay Indians				Yes-cc					Yes-cc
Mr. Will Micklin, Executive Director & Chief Operating Officer, Ewiiaapaayp Band of Kumeyaay Indians				Yes-cc					Yes-cc
Mr. Desiderio Vela, Environmental Program Manager, Ewiiaapaayp Band of Kumeyaay Indians									

Table 5.4 Tribal Consultation between January 2012 and February 2012

Tribal contact	Section 106 Consulting Party Meeting 01/05/2012	BLM Letter to Quechan 01/10/12	Gov. to Gov. Meeting with Viejas 01/23/2012	BLM Letter to Tribes 01/27/2012	Gov. to Gov. Meeting with Quechan 01/31/2012	Section 106 Consulting Party Meeting 02/09/2012	Gov. to Gov. Meeting with Viejas 02/21/2012	Gov. to Gov. Meeting with the Quechan 02/22/2012	BLM Letter to Tribes 02/27/2012
Mr. Keeny Escalanti Sr., President, Fort Yuma Quechan Indian Tribe		Yes-cc		Yes				Yes	Yes
Mr. Michael Jackson, Sr., President (Former), Fort Yuma Quechan Indian Tribe									
Mr. Virgil Smith, Tribal Council Member, Fort Yuma Quechan Indian Tribe		Yes	Yes		Yes			Yes	
Mrs. Bridget Nash-Chrabascz, Historic Preservation Officer (Former), Fort Yuma Quechan Indian Tribe									
Mr. John Bathke, Historic Preservation Officer, Fort Yuma Quechan Indian Tribe	Yes		Yes		Yes	Yes		Yes	Yes-cc
Ms. Pauline Jose, Cultural Committee Chair, Fort Yuma Quechan Indian Tribe									
Mr. Lorey Cachora, Fort Yuma Quechan Indian Tribe	Yes		Yes		Yes			Yes	
Mr. Preston Arrow-Weed, Ah-Mut Pipa Foundation/ Fort Yuma Quechan Indian Tribe									
Mr. Raymond Hunter, Chairman, Jamul Indian Village				Yes					Yes
Mr. Kenneth Meza, Sr., Chairman (Former), Jamul Indian Village									
Ms. Carlene A. Chamberlain, Executive Councilwoman, Jamul Indian Village				Yes-cc					Yes-cc
Mr. Jesse Pinto, Jamul Indian Village									
Ms. Carmen Lucas, Kwaaymii Laguna Band of Indians			Yes	Yes		Yes			Yes
Ms. Courtney Ann Coyle, Outside Legal Council for the Viejas and Kwaaymii	Yes		Yes	Yes-cc		Yes	Yes		Yes-cc
Ms. Gwendolyn Parada, Chairperson, La Posta Band of Kumeyaay Indians	Yes			Yes					Yes
Mr. Leroy Elliott, Chairman, Manzanita Band of Kumeyaay Indians				Yes		Yes			Yes
Ms. Angela Santos, Tribal Council Member, Manzanita Band of Kumeyaay Indians	Yes								

Table 5.4 Tribal Consultation between January 2012 and February 2012

Tribal contact	Section 106 Consulting Party Meeting 01/05/2012	BLM Letter to Quechan 01/10/12	Gov. to Gov. Meeting with Viejas 01/23/2012	BLM Letter to Tribes 01/27/2012	Gov. to Gov. Meeting with Quechan 01/31/2012	Section 106 Consulting Party Meeting 02/09/2012	Gov. to Gov. Meeting with Viejas 02/21/2012	Gov. to Gov. Meeting with the Quechan 02/22/2012	BLM Letter to Tribes 02/27/2012
Mr. John Elliott, Tribal Council Member, Manzanita Band of Kumeyaay Indians						Yes			
Mr. Jeff Riolo, Legal Council for Manzanita	Yes			Yes-cc					Yes-cc
Mr. Nick Elliot, Environmental Manager, Manzanita Band of Kumeyaay Indians									
Mr. Mark Romero, Chairman, Mesa Grande Band of Mission Indians				Yes					Yes
Mr. Allen Lawson, Jr., Chairman, San Pasqual Band of Diegueno Indians				Yes					Yes
Mr. David Toler, Tribal Council Member, San Pasqual Band of Diegueno Indians				Yes-cc					Yes-cc
Ms. Kristie Orosco, Environmental Director, San Pasqual Band of Diegueno Indians				Yes-cc					Yes-cc
Mr. Virgil Perez, Chairman, Santa Ysabel Band of Diegueno Indians				Yes					Yes
Mr. Johnny Hernandez, Chairman (Former), Santa Ysabel Band of Diegueno Indians									
Mr. Clint Linton, Santa Ysabel Band of Dieguено Indians				Yes-cc					Yes-cc
Mr. Daniel Tucker, Chairman, Sycuan Band Of Kumeyaay Nation				Yes					Yes
Mr. Jamie LaBrake, Tribal Council Member, Sycuan Band Of Kumeyaay Nation				Yes-cc		Yes			Yes-cc
Ms. Mary L. Resvaloso, Chairwoman, Torres-Martinez Desert Cahuilla Indians				Yes					Yes
Ms. Diana Chihuahua, Cultural Resources, Torres-Martinez Desert Cahuilla Indians				Yes-cc					Yes-cc
Mr. Bobby Barrett, Chairman (Former), Viejas Band of Kumeyaay Indians									
Mr. Anthony Pico, Chairman, Viejas Band of Kumeyaay Indians				Yes			Yes		Yes
Mr. Greybuck Espinoza, Tribal Council Member, Viejas Band of Kumeyaay Indians			Yes				Yes		
Mr. Raymond Bear Cuero, Tribal Council Member, Viejas Band of Kumeyaay Indians			Yes			Yes	Yes		

Table 5.4 Tribal Consultation between January 2012 and February 2012

Tribal contact	Section 106 Consulting Party Meeting 01/05/2012	BLM Letter to Quechan 01/10/12	Gov. to Gov. Meeting with Viejas 01/23/2012	BLM Letter to Tribes 01/27/2012	Gov. to Gov. Meeting with Quechan 01/31/2012	Section 106 Consulting Party Meeting 02/09/2012	Gov. to Gov. Meeting with Viejas 02/21/2012	Gov. to Gov. Meeting with the Quechan 02/22/2012	BLM Letter to Tribes 02/27/2012
Ms. Lisa Haws, Land Use Manager (Former), Viejas Band of Kumeyaay Indians									
Ms. Kim Mettler, Director of Legal Affairs, Viejas Band of Kumeyaay Indians	Yes		Yes	Yes-cc		Yes	Yes		Yes-cc
Mr. Frank Brown, Viejas Band of Kumeyaay Indians/KCRPC Chairman	Yes		Yes			Yes	Yes		

The draft MOA (attached as Appendix R) includes measures to respond to the concerns expressed above by Indian tribes including the requirement of a Tribal Access Plan recognizing the importance of the TCP and their ability to access federally managed lands to conduct cultural and religious practices, as variously specified in EO 13007 and the AIRFA. It also includes a draft Historic Properties Treatment Plan which describes in further detail the measure to resolve and minimize adverse effects should the project be approved. Additionally, to address the concerns related to the discovery of previously unidentified cultural resources during construction, the MOA imposes a robust construction monitoring plan that provides for tribal participation, as well as a draft NAGPRA Plan of Action to ensure the proper treatment and protection of prehistoric human remains should any be found during construction. The MOA also provides for increased BLM ranger patrols and the funding and the development of a long-term cultural resource monitoring program in response to concerns regarding the potential for degradation associated with increased access. Finally, to address the concerns raised about the lack of tribal values within the archaeological report itself, the BLM is considering compiling all the tribal information received to date, as well as summaries of prior ethnographic information collected from the project area into a separate stand-alone document that supplements the archaeological survey report. The latter has been discussed with some tribes and tribal members during government-to-government meetings and appears to be an idea that is received favorably.

5.3 Implementation, Monitoring, and Enforcement

5.3.1 Implementation

The BLM will continue to involve and collaborate with the public during implementation of this Proposed Action. Opportunities to become involved during implementation and monitoring could include development of partnerships and community-based citizen working groups. The BLM invites citizens and user groups within the vicinity of the Proposed Action to become actively involved in implementation, monitoring, and enforcement of decisions. The BLM and citizens could collaboratively develop site-specific goals and objectives that mutually benefit public land resources, local communities, and the people who live, work, or play on the public lands.

5.3.2 Monitoring

The BLM would monitor activities throughout the life of the Proposed Action to ensure that decisions are implemented in accordance with the approved ROD and ROW grant. Monitoring would be conducted to determine whether decisions, BMPs and approved mitigation are achieving the desired effects. Effectiveness monitoring would provide an empirical data base on impacts of decisions and effectiveness of mitigation. Effectiveness monitoring also would be useful for improving analytical procedures for future impact analyses and for designing or improving mitigation and enhancement measures. The County of Imperial also has an obligation under the CEQA to monitor the implementation of adopted mitigation measures within the area of its jurisdiction.

5.3.3 Enforcement and Adaptive Management

The BLM would incorporate adaptive management into mitigation for the Proposed Action. Adaptive management is a system of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or to re-evaluate the outcomes (DOI, 2003). This system is in effect developing an adaptive NEPA process as an implementation tool that goes beyond the traditional "predict-mitigate-implement" model and incorporates the "predict-mitigate-implement-monitor-adapt" adaptive management model.

Procedures include (DOI, 2003):

- Determining environmental effects of a project and identifying mitigation needs along with other permitting and regulatory requirements. Analysis should indicate where data are lacking and uncertainty exists with respect to the intended outcomes and the significance of this lack (see 40 CFR 1502.22);
- Monitoring designed for adaptive management must be able to result in appropriate adjustments in project activities as the project is constructed and planned mitigation is installed;
- Striving to ensure public input into and understanding of the principles of adaptive management;
- Maintaining open channels of information to the public and affected regulatory and permitting agencies during the application of adaptive management, including transparency of the monitoring process that precedes adaptive management and the decision-making process that implements it. This involves: (a) identifying indicators of change, (b) assessing monitoring activities for accuracy and usefulness, and (c) making changes in tactics, activities and/or strategies; and
- Providing post-activity opportunity for public and affected outside agency review of adaptive management practices, including practices that were exceptions to any resource management plans or that had permitting and other regulatory requirements not satisfied by prior coordination.

Adaptive management allows agencies, in their NEPA reviews, to establish and analyze mitigation measures that are projected to result in the desired environmental outcomes, and identify those mitigation principles or measures that it would apply in the event the initial mitigation commitments are not implemented or effective (CEQ, 2011).

5.4 Public Involvement

5.4.1 Introduction

Public participation is a dynamic process that continues throughout the preparation of the EIS/EIR. Scoping meetings were conducted after the publication of the Notice of Intent (NOI) and Notice of Preparation (NOP) to formally solicit public and agency input on issues to be addressed in the EIS/EIR. In addition, BLM and Imperial County have coordinated with affected local, state, and federal agencies on issues of concern, as described in Sections 5.1 and 5.2 above. As explained in the NOI, the BLM used and coordinated the NEPA commenting process to satisfy the public involvement process for Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)) as provided for in 36 CFR 800.2(d)(3).

The results of the scoping process are summarized below.

5.4.4 Scoping

The NOI was published in the Federal Register (Volume 75, No. 238) on December 13, 2010. On January 5 and 6, 2011, the BLM and Imperial County held publicly noticed Scoping Meetings at the Board of Supervisors Chambers, 2nd Floor, County Administration Center and the Ocotillo Community

Park in El Centro, California, and Ocotillo, California, respectively. A Public Scoping Report was released for public review in March 2011 and is included as Appendix C.

Scoping Requirements

The BLM authorization of a ROW grant for the project would require a resource management land use PA to the CDCA Plan. Scoping is required by NEPA pursuant to CEQ (40 CFR 1501.7) regulations. The process ensures that significant issues, alternatives, and impacts are addressed in environmental documents and determines the degree to which these issues and impacts will be analyzed in the EIS.

Scoping Process

The scoping process for the Ocotillo Wind Energy Facility EIS/EIR included the following:

- Publishing the Notice of Intent (NOI)/Notice of Preparation (NOP) to prepare an EIS/EIR.
- Conducting public scoping meetings and agency consultation meetings.
- Documenting all public and agency comments received for the proposed project in a Public Scoping Report (Appendix C).

Each of these components is discussed below.

Notice of Intent

In compliance with NEPA (40 CFR 1501.7), the BLM published a NOI in the Federal Register to prepare an EIS for the Ocotillo Express Wind Project (FR Vol. 75, No. 238, page 77654, December 13, 2010). The project name was subsequently changed to the OWEF. The scoping period ended on February 7, 2011. The BLM established a website with project information describing the various methods for providing public comment on the project, including an e-mail address where comments could be sent electronically.

Notice of Preparation

As required by CEQA Guidelines §15082 (14 CCR 15000 et seq.), the County of Imperial issued an NOP on December 21, 2010, that summarized the Ocotillo Wind Energy Facility project and stated its intention to prepare a joint EIS/EIR, and requested comments from interested or affected parties.

Public Scoping Meeting

Notification for public scoping meetings held on January 5, 2011, at El Centro and January 6, 2011, at Ocotillo, was made available to the public on BLM's website for the OWEF[1] and ran in the Imperial Valley Press on December 21, 2010. In addition, notices were sent to stakeholders, including the state clearinghouse; federal, state, and local agencies and organizations; local property owners, local libraries; and Native American groups.

Two public scoping meetings were held on January 5 and 6, 2011, in El Centro and Ocotillo, CA, respectively. Presentations describing the environmental review process were delivered by representatives of the BLM and County of Imperial. Pattern Energy also delivered a presentation describing the project. Approximately 70 and 100 persons attended the meetings in El Centro and Ocotillo respectively, including representatives from local and state agencies, organizations, and private citizens. Thirty-three letters were received during the scoping comment period that ended on February 7, 2011: three from federal, state, and local agencies and organizations; and thirty from individuals. Comments were received on the following categories: project description; human environment issues; natural environment issues; indirect and cumulative impacts; project alternatives; and EIS/EIR administrative and permitting issues. A summary of these comments is provided in the Public Scoping Report (Appendix C). Comments received during scoping are addressed in the analysis of impacts in this EIS/EIR, and were also considered in the formulation of alternatives.

---

[1] http://www.blm.gov/ca/st/en/fo/elcentro/nepa/ocotillo_express_wind.html

Scoping Report

The BLM produced a scoping report in March 2011, which contained information received during the public scoping comment period. Comments received during the scoping period were grouped into the following three categories:

- Issues or concerns that could be addressed by effects analysis;
- Issues or concerns that could develop an alternative and/or a better description or qualification of the alternatives; and
- Issues or concerns outside the scope of the EIS/EIR.

5.5 Public Comment Process

5.5.1 Introduction

The BLM and the County distributed the joint Draft EIS/EIR for the proposed OWEF for public and agency review and comment on July 8, 2011. The comment period ended October 6, 2011. A total of 405 comment letters, including e-mails, were received. Eight comment letters were received after the close of the comment period. In connection with the Section 106 and government-to-government processes, the Lead Agencies committed to fully consider any additional comments submitted by federally recognized Native American Tribes through February 17, 2012.

This section is organized as follows:

5.5.1 Introduction

5.5.2 Format of the Responses to Comments. This section describes the format and organization of the comments received on the Draft EIS/EIR and the responses to those comments.

5.5.3 Index of Comments Received. This section provides a list of the comments received on the Draft EIS/EIR, by member of the public, agency, or organization, and lists the unique letter/number code for each comment.

5.5.4 Common Responses. This section provides consolidated responses for topics on which a number of similar and related comments were received.

5.5.5 Responses to the Comments. This section lists the individual comment numbers for each comment and provides a response for each comment.

5.5.6 **Comments.** This section contains all the comments received on the Draft EIS/EIR, with the individual numeric code assigned to each individual comment within each comment letter/email.

5.5.2 Format of the Responses to Comments

The comments received on the Draft EIS/EIR are organized by agency, organization, or member of the general public. Each comment letter/e-mail is assigned a unique number. Individual comments/issues within each comment letter/email are numbered individually along the right-hand margins. Comments, so delineated, are provided in Appendix O.

5.5.3 Index of Comments Received

Table 5-5 lists all individuals, agencies, and organizations that provided written comments on the Draft EIS/EIR. As described above, each comment letter, upon receipt, was assigned a unique number with each comment individually numbered as well. For example, Comment 1-01 is the first substantive comment in Comment Letter 1. "1" represents the commenter; the "01" refers to the first comment in that letter.

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
Federal Agencies	
F1	U.S. Department of Homeland Security
F2	U.S. Environmental Protection Agency, Region IX
F3	U.S. Department of the Interior, National Park Service
F4	U.S. Fish & Wildlife Service, California Department of Fish and Game
State Agencies	
S1	Department of Transportation
S2	Regional Water Quality Control Board
S3	Native American Heritage Commission
S4	Department of Parks and Recreation
S5	Department of Parks and Recreation
Local Agencies	
L1	County of Imperial, Department of Public Works
L2	Imperial County Fire Department
L3	Imperial Irrigation District
L4	Imperial County Fire Department
L5	Imperial County Air Pollution Control District
L6	County of San Diego, Department of Planning and Land Use
Native American Tribes	
N1	Viejas Tribal Government
N2	Viejas Tribal Government
N3	Viejas Tribal Government
N4	Viejas Tribal Government
N5	Viejas Tribal Government
N6	Viejas Tribal Government
N7	Viejas Tribal Government
N8	Viejas Office of Legal Affairs
N9	Viejas Office of Legal Affairs
N10	Ewiiaapaayp Tribal Office
N11	Ewiiaapaayp Tribal Office
N12	Ewiiaapaayp Tribal Office
N13	Manzanita Band of the Kumeyaay Nation

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
N14	Kwaaymii, Laguna Band of Indians
N15	Kwaaymii, Laguna Band of Indians
N16	San Pasqual Band of Diegueno Mission Indians of California
Organizations	
O1	Center for Biological Diversity
O2	Anza Borrego Foundation
O3	Desert Protective Council
O4	Save the Eagles International
O5	Calexico Chamber of Commerce
O6	El Centro Chamber of Commerce
O7	Audubon California
O8	Defenders of Wildlife/Natural Resources Defense Council/Sierra Club
O9	Imperial Chamber of Commerce
O10	California State Parks Foundation
O11	Stephan C. Volker (Desert Protective Council, The Protect Our Communities Foundation, Backcountry Against Dumps, East County Community Action Coalition, and Donna Tisdale)
O12	Center for Biological Diversity
O13	Backcountry Against Dumps
014	San Diego Gas & Electric
Public	
P1	Megan Ahn
P2	Marijo Ahnger
P3	John and Karen Andersen
P4	Cynthia Anderson and Bill Dahl
P5	Carl Atwood
P6	Stephanie Austin
P7	Vikki Bay
P8	Linda Bosshart
P9	Teri Brewer
P10	Kathy Brigger
P11	Cindy Buxton
P12	Nancy Callahan
P13	Betty Thale Cloud
P14	Hal Cohen
P15	Alison Coppola
P16	Foss and Esther Corley
P17	Susan W. Cramer
P18	Susan W. Cramer
P19	Helen Davis
P20	eirian@comcast.net
P21	Carole and Ivan Edelman
P22	Edward Engle
P23	Thomas A. Enslow
P24	Parke Ewing
P25	Parke Ewing
P26	Parke Ewing
P27	Parke Ewing
P28	Parke Ewing
P29	Parke Ewing
P30	Parke Ewing
P31	Parke Ewing
P32	Parke Ewing

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
P33	Parke Ewing
P34	Parke Ewing
P35	Parke Ewing
P36	Parke Ewing
P37	Parke Ewing
P38	Parke Ewing
P39	Parke Ewing
P40	Parke Ewing
P41	Parke Ewing
P42	Parke Ewing
P43	Parke Ewing
P44	Parke Ewing
P45	Parke Ewing
P46	Parke Ewing
P47	Parke Ewing
P48	Parke Ewing
P49	Parke Ewing
P50	Parke Ewing
P51	Linda Foote
P52	Dave and Tina Gunall
P53	Rick Hamilton
P54	Mel (Mary Ellen) Harte, Ph.D
P55	Daniel Hellyer
P56	Ann Howell
P57	Randolph C. Houts
P58	Brendan Hughes
P59	Jerry Hughes
P60	Dr. Pam Kersey
P61	James Knotter
P62	Conrad Kramer and Lisa A. Gonzales-Kramer
P63	Kevin Kraus
P64	Ray Kumli
P65	Gerald A. Lieberman, Ph.D
P66	Diana Lindsay
P67	Jim and Sue Liskovec
P68	Carmen Lucas
P69	Cornelia Lieb-Lundell, PT, DPT, PCS
P70	Anita Mallin
P71	Scot Martin
P72	Susan Massey
P73	Kym J. McNabb
P74	Mark C. Jorgensen
P75	Marilyn Moskowitz
P76	Dr. Edward M. Nolan
P77	Tony Palermo
P78	Ruth Porter
P79	Larry M. Powell
P80	Robert Raney
P81	K. Brooks Reid, Ph.D
P82	Kerry Rich
P83	Evan Roman
P84	Beverly Sabo
P85	Susan Schaffner

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
P86	Paulette Schindele
P87	Daren Sefcik
P88	Britta Lee Shain
P89	Peter Shapiro
P90	Rachel D. Shaw
P91	Ralph Singer, Anza Borrego Foundation
P92	Joann Stang
P93	Sandy Steinman
P94	Donna Tisdale, Backcountry Against Dumps
P95	Donna Tisdale, Backcountry Against Dumps
P96	Magnus von Unge, MD, Ph.D
P97	Gabriel Vogeli
P98	Marvin Wayrynen
P99	Sam Webb
P100	Sam and Astrid Webb
P101	Carolyn Westelaken
P102	Robert F. Wieser
P103	Howard G. Wilshire, Ph.D
P104	Howard G. Wilshire, Ph.D
P105	Don Wood, Pacific Energy Policy Center
P106	David Worthy
P107	Sandy Zelasko
P108	Anne Seeman
P109	Bob McCulley
P110	Bonnie Nickel
P111	Brian Silvey
P112	Chad Bird
P113	Charlene Aron
P114	Charles and Laurie Baker
P115	Charles and Lara Leavitt
P116	Cheryl Griffin
P117	Christa Vragel
P118	Cindy Walsh
P119	Vincent Loverde and Cynthia Kunishige
P120	Erica Daniel
P121	Carolyn Straub and Steve McHenry
P122	Arnold Mroz
P123	Barbara J. Halle and Peter A. Halle
P124	Janene Colby
P125	Alex and Nancy Boss
P126	Norm Gallagher
P127	William A. Reavey
P128	Dr. Anthony D. McIvor
P129	Jim and Ellen LaMotte
P130	Barbara M. Tracy
P131	Graeme Kinsey
P132	Cynthia Anderson and Bill Dahl
P133	Cynthia Collins
P134	Richard Tavern
P135	Kathleen Beck, Communities United for Sensible Power
P136	Fred Fernandez
P137	Fred Lamb
P138	Gidon Singer

Table 5-5. Comments on the OWEF Draft EIS/EIR	
Comment Letter	Commenter
P139	H. Nick Ervin
P140	Jack Ellwanger, Pelican Network
P141	John H. Eisenhart
P142	Kevin Walsh
P143	Kristina Rood
P144	Lee Oler
P145	Les Doak
P146	Leslie Bellah
P147	Lisa Spoon
P148	Lynn T. Teel
P149	Mark Meech
P150	Mark Ostrander
P151	Melvin and Ellen Sweet
P152	Nuri Pierce
P153	Paul Zablotny
P154	Paulette D. Ache
P155	Ralph Singer
P156	Rand Newman
P157	Randall Ricketts
P158	Ray Cochran
P159	Richard Caputo
P160	Robert Dallezotte
P161	Ronald W. Schuelke
P162	Rose Hartman
P163	Sandy Zelasko
P164	Scott E. Smith
P165	Theresa Acerro
P166	Walter R. Tschinkel
P167	William Taylor
P168	Andrew Renfrow
P169	Michael W. Cuff
P170	Richard R. James
P171	Parke Ewing
P172	Parke Ewing
P173	Parke Ewing
P174	Parke Ewing
P175	Parke Ewing
P176	Parke Ewing
P177	Parke Ewing
P178	Parke Ewing
P179	Parke Ewing
P180	Parke Ewing
P181	Parke Ewing
P182	Parke Ewing
P183	Parke Ewing
P184	Parke Ewing
P185	Parke Ewing
P186	Parke Ewing
P187	Parke Ewing
P188	Parke Ewing
P189	Parke Ewing
P190	Parke Ewing
P191	Parke Ewing

Table 5-5. Comments on the OWEF Draft EIS/EIR	
Comment Letter	Commenter
P192	Parke Ewing
P193	Parke Ewing
P194	Parke Ewing
P195	Parke Ewing
P196	Parke Ewing
P197	Parke Ewing
P198	Parke Ewing
P199	Parke Ewing
P200	Parke Ewing
P201	Parke Ewing
P202	Parke Ewing
P203	Parke Ewing
P204	Parke Ewing
P205	Parke Ewing
P206	Parke Ewing
P207	Parke Ewing
P208	Parke Ewing
P209	Parke Ewing
P210	Parke Ewing
P211	Parke Ewing
P212	Parke Ewing
P213	Parke Ewing
P214	Parke Ewing
P215	Parke Ewing
P216	Parke Ewing
P217	Leslie Palomino
P218	Laurel Ware
P219	Kim Petersen
P220	Rosemary Cortez
P221	Alfred DeVico
P222	Michael Beckage
P223	Celia Lawley
P224	Gail M. Adams
P225	Gail M. Adams
P226	Susan Massey
P227	Kate Harper
P228	John and Patricia Campbell
P229	Carol Black
P230	Gene R. Trapp, Ph.D
P231	Connie Spears
P232	Michael A. Frizzell
P233	Stacy and Greg Kline
P234	Larry Banks
P235	Wilma Katz
P236	Renee Cox
P237	Dan Hicks
P238	Alan Madrigal
P239	Jerry Hutchins
P240	Greg Littell
P241	Beth and Bob Hon
P242	Dean G. Frazer
P243	Helena Quintana Arrow-weed
P244	Jane Higginson

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
P245	Paul Woolery
P246	Callie Mack
P247	Edalia Olivo-Gomez
P248	Arnold F. Schoeck
P249	Julian E. Hurt, M.D.
P250	Robert M. Brock
P251	Kay Schroer
P252	Diahna Garcia-Ruiz
P253	Kristina Rood
P254	Monica Ketchum
P255	Rolando Vizcarra
P256	Sylvia Gonzalez
P257	Marjorie E. Seybold
P258	Victor Nava
P259	Aaron F. Popejoy
P260	Aaron F. Popejoy
P261	Becky Estrada-McWane
P262	George A. Nava
P263	Myrna Wosk
P264	Kevin Emmerich and Laura Cunningham, Basin and Range Watch
P265	Nicole D'Angelo
P266	Rafael Vargas
P267	Patsy Wilson
P268	Misty R. Houser
P269	Scott Cashen
P270	ladeekittee@aol.com
P271	Joan Leopold
P272	Susan Hancock and Richard Orne
P273	Deborah Alice Jones
P274	Akshay Khatri
P275	Diana Palacios
P276	Robert Cavanaugh
P277	Lilla Hangay
P278	Frank Tagaban
P279	Anisa Devine
P280	Roland and Suzanne Lajoie
P281	Jenny Wilder, Mojave Group, Sierra Club
P282	M. Carmen Ramirez
P283	Jared G. Fuller
P284	David Andreoli
P285	Michael Peterson
P286	Daren R. Sefcik
P287	Greg Smith
P288	Mark C. Jorgensen
P289	Bill Howell
P290	Abram Perlstein
P291	Bonnie L. McClees
P292	David Wimpfheimer
P293	James Roller
P294	Walter J. Lukina and Delores Lukina
P295	James H. Smith
P296	Judith A. Ramirez
P297	Briana Ross

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
P298	Richard and Jane Wagner
P299	Michael Pouston
P300	Don Endicott
P301	Dorothy Weisheit
P302	Dr. Jackson Underwood
P303	Fred Brown
P304	Fred Wollman
P305	Herbert Petrillo
P306	John Barth
P307	Jon Vick
P308	Linda Tandle
P309	Mack Ray
P310	Mike Dusharme
P311	Kathy Marquand
P312	Eric Mustonen
P313	Mark Rich
P314	Joseph Asciutto
P315	Camille Rothenburg
P316	Lyle Brecht
P317	Darren Smith
P318	Roy Long
P319	Kevin C. Smth
P320	Joan Caballero
P321	Kathleen Thayer
P322	Greg Smtih
P323	Robert Baran
P324	Jimmy Ray Jones
P325	Jerry Tuck
P326	Jerry Tuck
P327	Alejandra Marquez
P328	Kevin Emmerich and Laura Cunningham, Basin and Range Watch
P329	Michael Gordon
P330	Gustavo Arguelles Jr.
P331	Debora Palma
P332	Diahna Garcia-Ruiz
P333	Joan S. Schneider, Ph.D
P334	Joan S. Schneider, Ph.D
P335	Harry F McCann
P336	Lee M. Johnson
P337	James and Cheryl Pelley
P338	James and Cheryl Pelley
P339	James and Cheryl Pelley
P340	James and Cheryl Pelley
P341	James and Cheryl Pelley
P342	James and Cheryl Pelley
P343	James and Cheryl Pelley
P344	Edie Harmon
P345	Atul Kumar
P346	Scotty Baldwin
P347	Parke Ewing
P348	loconoco@netzero.com
P349	Mark Meech
P350	Mark Meech

Table 5-5. Comments on the OWEF Draft EIS/EIR

Comment Letter	Commenter
P351	Harold and Lambertha Stier
P352	Lynn Fulks
P353	Gail L. Ellestad
P354	Fred Jee
P355	Kelley Jorgensen
P356	Dick Troy
P357	Joy M. Johnson
P358	Alyce Golding, Melissa McVicar, Myrna Horn and Robert Horn
P359	Thomas A. Enslow
P360	Harrison Karr

*Letter was resent on December 13, 2011. Responses have only been provided to the letter submitted on October 6, 2011.

Table 5-6 lists all individuals who provided written comments on the Draft EIS/EIR after the close of the public comment period on October 6, 2011. Additionally, Table 5-6 lists all Native American Tribes that provided written comments on the Draft EIS/EIR after the close of the public comment period. As described above, each comment letter, upon receipt, was assigned a unique number with each comment individually numbered as well. For example, Comment LC1-01 is the first substantive comment in Comment Letter LC1. "1" represents the commenter; the "01" refers to the first comment in that letter.

Table 5-6. Late Comments and Extended Period Comments received on the OWEF Draft EIS/EIR

Comment Letter	Commenter
Late Comments	
LC1	Derik Martin
LC2	Jack Hettinger
LC3	Rick and Paul Huls
LC4	Chris Gruenwald
LC5	Steen Hillestrøm
LC6	Susan Massey
LC7	Jacob Sierra
LC8	Jose Barber
LC9	Barbara Hill
LC10	Edie Harmon
Comments from Native American Tribes Submitted After Public Comment Period	
EC1	Iipay Nation of Santa Ysabel
EC2	Viejas Tribal Government
EC3	Cocopah Indian Tribe
EC4	Cocopah Indian Tribe
EC5	Sycuan Band of the Kumeyaay Nation
EC6a	Viejas Tribal Government
EC6b	Viejas Tribal Government
EC6c	Viejas Tribal Government
EC6d	Thomas F. King, Ph.D. (on behalf of the Viejas Tribal Government)
EC6e	Thomas F. King, Ph.D. (on behalf of the Viejas Tribal Government)
EC6f	Thomas F. King, Ph.D. (on behalf of the Viejas Tribal Government)
EC6g	Daniel F. McCarthy (on behalf of the Viejas Tribal Government)
EC6h	Carmen Lucas (on behalf of the Viejas Tribal Government)
EC6i	Jon P. Rebman (on behalf of the Viejas Tribal Government)
EC6j	Ray Clark (on behalf of the Viejas Tribal Government)
EC6k	Owen Schmidt (on behalf of the Viejas Tribal Government)
EC6l	Charles H. Eccleston (on behalf of the Viejas Tribal Government)

Table 5-6. Late Comments and Extended Period Comments received on the OWEF Draft EIS/EIR

Comment Letter	Commenter
EC6m	Courtney Ann Coyle (on behalf of the Viejas Tribal Government)
EC7	Campo Band of Mission Indians
EC8	H. Jill McCormick (Cocopah Indian Tribe)
EC9	Viejas Office of Legal Affairs

5.5.4 Common Responses

A number of the comments received on the Draft EIS/EIR discussed the same issues or environmental concerns. Rather than repeat responses, the Common Responses identified here and set forth below were prepared:

Common Response 1: Comments Received that are not Substantive

Common Response 2: Purpose and Need

Common Response 3: Range of Alternatives

Common Response 4: Health Concerns

Common Response 5: CDCA Plan Limited Use Areas

Common Response 6: Incorporation by Reference of Material Submitted and Comments on other Documents

Common Response 7: Project Greenhouse Gas Emissions

Common Response 8: Fugitive Dust Emissions and Mitigation

Common Response 9: Adequacy of Use of Plans for Mitigation

Common Response 10: Water Supply

Common Response 11: Anza Borrego Desert State Park / Juan Bautista de Anza National Historic Trail

Common Response 12: Section 106 Government-to-Government Consultation

Common Response 13: Traditional Cultural Properties, Cultural Landscapes, and Districts

Common Response 1: Comments Received that are not Substantive

Many comments submitted on the Draft EIS/EIR expressed opposition to or support for the OWEF and did not necessitate any changes to the analysis or conclusions pertaining to the Proposed Action or alternatives. The Lead Agencies determined that these were not substantive comments as they were not relevant to the EIS/EIR scope, analysis, or process as stated in CFR 1503.4(c). For example, these comments expressed philosophy, values, and/or support or opposition to the Proposed Action, but did not comment on the adequacy or accuracy of the analysis presented in the Draft EIS/EIR. Some of these comments made statements or assertions about impacts, but did not provide any details and did not attempt to relate their statements to the information or analysis in the Draft EIS/EIR. See also CEQ publication NEPA's 40 Most Asked Questions #29a.

In some cases, the information provided in these comments resulted in factual corrections that are presented in the Final EIS/EIR. However, those corrections did not result in a change in the analysis or conclusions, and as a result, are not considered a substantive comment as identified in 40 CFR 1503.4(c)).

Common Response 2: Purpose and Need

Some comments indicated that the EIS/EIR purpose and need statement needs to be modified or broadened. For example, some comments suggested that the purpose and need statement should be expanded to include protection of environmental resources or reflect additional federal land management policies and regulations.

Under CEQ's regulations, the BLM's purpose and need statement describes the problem or opportunity to which the BLM is responding and what the BLM hopes to accomplish by the action, not the applicant's interests and objectives (BLM NEPA Handbook Section 6.2; 40 C.F.R. § 1513). However, because the BLM is not required to consider alternatives that are not practical or feasible from the technical and economic standpoint and using common sense, the applicant's interests and objectives, including any constraints or flexibility with respect to their proposal, help to inform the BLM's decision, as it helps determine which alternatives are analyzed in detail through the NEPA process and may also provide a basis for eliminating some alternatives from detailed analysis.

For most renewable energy projects, like the OWEF, the BLM's purpose and need for action will arise from the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) to respond to a ROW application requesting authorized use of public lands for a specific type of renewable energy development by a particular project proponent.

Consistent with Title IV of the FLPMA, the BLM, as land management agency, relies on industry to identify renewable energy technologies and general project locations and configurations that are technically and economically viable given current market conditions, renewable portfolio standards, technological advancements, and transmission access. Through pre-application and NEPA processes for such projects, the BLM works with applicants, federal land and resource management agencies, and stakeholders in identifying appropriate project locations that conform with federal law, regulation, and policy, and with existing land use plans. These activities result in refinements to proposal and/or the identification of alternate location.

The purpose and need statement also describes the BLM's authorities and management objectives with respect to renewable energy and public lands. In accordance with FLPMA (Section 103 (c)), public lands are to be managed for multiple use in a manner that takes into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant ROWs on public lands for systems of generation, transmission, and distribution of electric energy (Section 501 (a)(4)). In responding to a ROW grant application under this authority, the BLM may decide to deny the proposed row, grant the row, or grant the ROW with modifications. In accordance with the row regulations, modifications may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1).

As explained in the purpose and need statement for this EIS/EIR, this Proposed Action would, if approved, assist the BLM in addressing the management objectives in: (i) the Energy Policy Act of 2005, which set forth the "sense of Congress' that the Secretary of the Interior to approve 10,000 MW of electricity from non-hydropower renewable energy projects located on public lands by 2015; and (ii) Secretarial Order 3285Al (March 11, 2009) which establishes the development of environmentally responsible renewable energy as a priority for the Department of the Interior.

Courts generally defer to agency judgment in defining the objectives of proposed projects as long as the statement is reasonable. Generally, agencies need to follow only a "rule of reason" in preparing an EIS. This rule of reason governs both the purpose/need statement and the alternatives the agency must discuss, and the extent to which it must discuss them. The agency bears the responsibility for defining at the outset the objectives of an action. In *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 198 (D.C. Cir 1991) the court stated that "[t]he goals of an action delimit the universe of the action's reasonable alternatives" and held that an agency "may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality. Nor may any agency frame its goals in terms so unreasonably broad that an infinite number of alternatives would accomplish these goals and the project would collapse under the weight of the possibilities."

For example, need was addressed in *Roosevelt Campobello International Park Commission v. E.P.A.*, 684 F.2d 1034 (1st Cir. 1982) which dealt with EPA's decision of whether to grant a permit under the National Pollutant Discharge Elimination System to a company proposing a refinery and deep-water terminal in Maine. The criteria used by EPA in its select of alternative sites to evaluate was "focused by the primary objectives of the permit applicant," and EPA had limited its consideration of sites only to those sites that were considered feasible when considering the applicant's stated goals. The court found that these criteria for selection of alternative sites were sufficient to meet its NEPA responsibilities.

The purpose and need section of this EIS/EIR presents the problem being addressed and the actions being addressed. The purpose and need as formulated permitted the BLM to develop a reasonable range of alternatives that would resolve the problem (namely responding to the proponent's ROW application), including alternatives that partly meet the purpose and need while resulting in fewer environmental impacts, thereby allowing the decision makers to evaluate trade-offs, and the benefits of the Proposed Action. It appropriately distinguishes between the need for the proposed action and the desires or preferences of the agency or applicant, and provides the parameters for defining a reasonable range or alternatives to be considered.

Common Response 3: Range of Alternatives

Numerous comments were submitted with similar language stating that the range of alternatives in the NEPA and CEQA analysis is not adequate, is unnecessarily restrictive, or unreasonably narrows the alternatives to the objectives of the Applicant rather than a range of alternatives for the "production and transmission of energy in a safe and environmentally sound manner" per authorities granted to the BLM.

A range of alternatives was evaluated for inclusion in the EIS/EIR and is described in Section 2.8. Courts have held that an agency need not consider all of the possible alternative actions in the environmental analysis, but is only required to look at those that are reasonable in light of the stated purpose and need of the project.

Potential alternatives were considered and evaluated in order to establish a reasonable range of alternatives to be evaluated in detail in this EIS/EIR. Potential alternatives were developed by the EIS/EIR preparers at the direction of and in coordination with BLM, Imperial County, and the ACOE, using appropriate screening criteria pursuant to NEPA and CEQA. These criteria were used to evaluate whether a potential alternative would: achieve the project purpose and meet most project objectives; be feasible; and offer environmental advantages over the proposed project, including avoidance or reduction of significant environmental impacts.

A total of 18 potential alternatives to the Applicant's proposed project were initially considered for evaluation in the EIS/EIR, which included the original project, reduced size projects, alternative configurations/phasing of the project site, alternative sites, and other types of energy projects. Six alternatives were carried forward for detailed analysis in the EIS/EIR, including the No Project/Action Alternatives.

With respect to NEPA requirements, the range of alternatives evaluated by the BLM was developed to evaluate alternatives to a proposed action developed by an applicant for a federal permit or license.

Neither NEPA nor the CEQ regulations make a distinction between actions initiated by a federal agency and by applicants. Early NEPA case law, while emphasizing the need for a rigorous examination of alternatives, did not specifically address this issue. In 1981, the CEQ addressed the question in its document "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations." CEQ indicated that the emphasis in determining the scope of alternatives should be on what is "reasonable" and clarified that "Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant."

In a memorandum published in the Federal Register at 48 Fed. Reg. 34263 (1983), the CEQ provided further clarification of this question as it related to the appellate court decision for *Roosevelt Campobello International Park Commission v. EPA,* 684 F.2d 1034 (1st Cir. 1982). The court determined that EPA's choice of alternative sites was "focused by the primary objectives of the permit applicant . . ." and that EPA properly had limited its consideration of sites to only those sites which were considered feasible, given the applicant's stated goals. The court found that EPA's criteria for selection of alternative sites was sufficient to meet its NEPA responsibilities.

The CEQ memorandum noted that "Other factors to be developed during the scoping process -- comments received from the public, other government agencies and institutions, and development of the agency's own environmental data -- should certainly be incorporated into the decision of which alternatives to seriously evaluate in the EIS. There is, however, no need to disregard the applicant's purposes and needs and the common sense realities of a given situation in the development of alternatives."

Consistent with this authority and guidance, the alternatives developed for this EIS/EIR represent a practicable and feasible means of achieving BLM's purpose and need for the Proposed Action, provide a clear basis for choice among alternatives, and address unresolved resource conflicts, including modified site configurations, while remaining cognizant of issues of feasibility. Consistent with the Proposed Action's purpose and need, this EIS/EIR did not analyze alternative or different generation technologies because the BLM was responding to a right-of-way application for a specific technology. NEPA does not specify the nature and number of alternatives that must be analyzed as it varies from project to project.

Similarly, a number of comments submitted on the Draft EIS/EIR stated that a distributed generation alternative, specifically installation of roof-top solar panels, should have been analyzed. Distributed generation refers to the installation of small-scale renewable energy facilities (typically solar) at individual locations at or near the point of consumption (e.g., use of solar photovoltaic panels on a business or home to generate electricity for on-site consumption). Individual distributed generation systems typically generate less than 10,000 kilowatts. Current research by the DOE indicates that development of both distributed generation and utility-scale renewable energy development will be needed to meet future energy needs in the United States, along with other energy resources and energy efficiency technologies.

Distributed solar generation was described and considered in Section 2.8. It was noted that the alternative would partially meet objectives (renewable energy). However, it would not meet the primary objective of wind power generation and would not likely be implemented in a timeframe to meet the Renewables Portfolio Standard requirements. Implementation of this alternative would likely be economically infeasible for the Applicant to implement. Additionally, barriers exist for distributed solar generation related to interconnection with the electrical distribution grid.

Finally, the Energy Policy Act of 2005 established a goal for the Secretary of the Interior to approve 10,000 MW of electricity from non-hydropower renewable energy projects located on public lands. The Act reflects Congress' conclusion that installation of renewable energy technologies on the public lands capable of producing at least 10,000 MW is appropriate. Given the current state of the technology, only utility-scale renewable energy generation projects are reasonable alternatives to achieve this level of renewable energy generation on public lands. Furthermore, the BLM has no authority or influence over the installation of distributed generation systems, other than on its own lands. Based on these considerations, the distributed generation alternative was not retained for detailed analysis in the EIR/EIS because it does not respond to the purpose and need to consider an application for the authorized use of public lands for a specific renewable energy technology.

A number of comments submitted on the Draft EIS/EIR stated that off-site energy generation alternatives should have been analyzed. Off-site alternatives within Imperial County were considered but eliminated from analysis for various reasons. Please see section 2.8 of the Final EIS/EIR. As Figure 2.7-1 of the Final EIS/EIR shows, two general areas of Imperial County have a "fair" to "superb" wind resource, as defined by the National Renewable Energy Laboratory: a "fair" to "excellent" wind resource in a small portion of the eastern third of the County, and a "good" to superb" wind resource in a small portion of the southwestern corner of the County.

A majority of the wind resource area within the eastern part of the County is located on Department of Defense (DOD) land, and the remainder in the eastern part of the County is located on BLM land scattered with small in-holdings of private land. However, based on mapping showing both wind resource and environmental/land constraints, BLM concluded that the DOD lands were unable to support construction of a comparably-sized wind energy facility capable of meeting the project's purpose. The remainder of eastern Imperial County land with "fair" to "excellent" wind resources is located within the Chuckwalla Desert Wildlife Management Area of Critical or Environmental Concern ("ACEC"). Areas with special designations such as wilderness or ACEC are precluded from wind energy development.

The southwestern corner of the County is primarily BLM land scattered with small in-holdings of private land. The southwestern-most corner of the County where the wind resource is "excellent" to "superb" is within the Jacumba Wilderness and the Yuha Basin ACEC, located south and southwest of the project site. As noted above, areas with these special designations are precluded from wind energy development.

Sites on other BLM-administered lands and private lands were considered. Much of the BLM-administered lands with the highest wind energy resource values are precluded from wind development by special designations such as wilderness or ACEC. Many potentially suitable areas of BLM-administered land outside these designated areas are precluded because they are in use or are proposed for other wind energy projects. One large area of BLM-administered land, located in northeastern Imperial County directly east of the Chocolate Mountain Naval Aerial Gunnery Range, was eliminated from consideration due to the substantially lower quality of its wind resource. Finally, large areas of private land that could accommodate a wind energy facility similar in size to the Proposed Action are located in the central and northwestern portion of the County, but wind resources in these areas are only "poor" to "marginal."

Common Response 4: Health Concerns

Several comments expressed health concerns related to shadow flicker, low frequency noise, and electric and magnetic fields (EMF).

Shadow Flicker

With the installation of WTGs, the proposed project has the potential to result in a phenomenon known as "shadow flicker". Shadow flicker is the alternating change in light intensity that occurs when rotating WTG blades cast moving shadows on the ground or on structures. Shadow flicker occurs only when the following conditions are met: the sun is shining with no clouds obscuring the sun; rotor blades are spinning; the WTG is located between the sun (whose path changes daily) and the receptor; and the receptor is sufficiently close to WTG. If these conditions are met, shadow flicker would likely only occur at sunset and sunrise.

In the past, concerns have been raised about the potential for wind turbine shadow flicker to cause seizures in some epileptics. Photosensitive epilepsy occurs in 1 person per 4,000 individuals, with a higher prevalence in children between 7 and 19 years of age (Douaud et al., 2011). Seizures are triggered in individuals with this form of epilepsy at frequencies greater than 3 Hz or 180 revolutions per minute (Harding et al., 2008).

The rotor speed of the proposed WTGs is between 6 and 14.8 rotations per minute (see Table 2-1 in Section 2 of the Draft EIS/EIR), which is substantially slower than the slowest speed that has the potential to cause photosensitive epilepsy. Two studies published in the scientific journal Epilepsia (Harding and Wilkins, 2008; Smedley et al., 2010) support this claim as they concluded that modern turbines, as described above, would not result in shadow flicker frequency at a rate that would induce seizures.

Although not dangerous *per* se, these flickers have been described by some as being annoying and detracting from enjoyment of their property for a limited amount of time a year. Therefore, as discussed in the Final EIR/EIS for this project, BLM Best Management Practices include site-specific recommendations (i.e. sufficient setback) to eliminate shadow flicker in the project design. Furthermore, the OWEF has been designed to avoid shadow flicker on sensitive receptors through a combination of careful siting of turbines in relation to residences, and the commitment to deploy Siemens technology that prevents blade rotation on individual turbines as needed to avoid causing shadow flicker on residences.

Audible Noise, Low Frequency Noise and Infrasound

The audible noise frequency range is considered to be between 20 - 20,000 Hz. Over the years audible noise tended to be the driving force behind the concerns around citing wind turbine projects. As a result governments around the world have established set-back distances that are typically based on a combination of: (1) audible noise levels; and (2) distances required to achieve these levels at non-participating residents. Imperial County has established a daytime noise limit of 50 dBA 1-hour Leq and a nighttime level of 45 dBA Leq. These levels are consistent with many other US and international guidelines governing noise limits for wind turbine projects. It is not anticipated that adherence to these guidelines will result in physiological health effects in neighbors. However, on occasion during the worst-case meterological conditions, it is possible that the turbine noise may be audible and cause some annoyance in a small percent of the population.

Some in the wind turbine health debate that have argued that even if appropriate audible noise setbacks are enforced that other factors, such as exposure to low frequency noise may cause health effects. Low frequency noise is generally considered to be in the 20 - 200 Hz range. The claims by people like Dr. Pierpont or Dr. Salt are merely hypothesis and have been made without supporting documentation of wind turbine low frequency noise measurements. For example, the often cited Salt and Hullar (2010) research demonstrated that at very low frequencies in the laboratory that the outer hair cells (OHC) of the cochlea of guinea pigs may be stimulated. The researchers have only theorized that this could be the case for people living around wind turbines and have not actually measured LFN or infrasound surrounding wind turbines.

According to Geoff Leventhall, Ph.D. (an internationally recognized expert in noise vibration and acoustics from the UK), in “Low Frequency Noise from Wind Turbines and Other Sources,” broad band infrasound and low frequency noise is not normally a disturbance for people.

Recently, O’Neal et al. (2011) published the first study that actually measured LFN outside and inside nearby homes (305 m (1,001 feet) and 457 m (1,499.34 feet)) from the Horse Hollow Wind Farm in Taylor and Nolan Counties, Texas. Similar measurements were collected at the GE 1.5-MW turbines and the Siemens 2.3-MW turbines (the same model proposed for the Ocotillo Wind Energy Facility). They determined that LFN and infrasound at both homes were less than any internally recognized standards and criteria published in the UK, US, and Japan. The authors concluded that no adverse public health effects from LFN or infrasound would be expected from the types of turbines studied at distances greater than 300 m (984.25 feet). Given that the closest turbine is 804.67 m (2,640 feet) from the nearest home, the project LFN and infrasound are unlikely to be cause for concern to health.

Electric and Magnetic Fields

Electric and magnetic fields (EMF) are physical fields produced by electrically charged objects, affecting the behavior of charged objects in the vicinity. Currently, the State of California has not adopted any specific limits or regulation on EMF levels related to electric power facilities. The proposed OWEF involves the installation of an electrical collection system that would primarily be installed underground as well as a short overhead connection to the new Sunrise Powerlink 500-kV transmission line. Due to the lack of nearby sensitive receptors, long-term exposure to EMFs related to the collection and transmission lines is not expected to occur.

As discussed in the EIR/EIS, research since 2001 concerning possible health effects associated with EMF has been consistent with earlier studies. Although the health effects of EMF are uncertain, field intensity, transients, harmonics, and changes in intensity over time are some of the EMF characteristics that may need to be considered to assess human exposure effect.

Havas and Colling (2011) recently published an article in a non-medical/science journal that speculates that EMF emissions from wind turbines and connecting power cables could be the cause of adverse health effects in people living near wind turbines. However, at best this article is speculative in nature and is not founded on reproducible sound scientific methods for establishing the link between EMF (that they believe could result in “dirty electricity”) and adverse health effects. That being said, their article does suggest that burying the collection line system can improve power quality and reduce the potential for these theoretical adverse effects. Given that the proposed project involves the burying the electrical collection system, it addresses any concerns raised in this paper.

The electrical wiring of the WTG itself is surrounded by an electrically conductive metal cover, resulting in very minimal EMF levels outside of the wind turbine. The closest residence to the project site is location L1, approximately 2,640 feet from the closest proposed wind turbine. The underground collection lines generally reduce magnetic fields much more rapidly with distance than do overhead lines, but could have a higher magnetic field directly over the centerline (than would occur directly under an overhead line). These collection lines would be located within the project boundary, except for the segment connecting across I-8 to Site 2; they would be at least 0.5 mile from any sensitive receptor, which would provide sufficient distance to dampen the level of EMF such that EMF levels at the nearest receptors would be no greater than existing ambient levels.

This conclusion is supported by a recent paper published by Israel et al. (2011). The aim of their study was to examine the levels of EMF, noise and vibration, emitted by Vestas V90 3-MW wind turbines along the Black Sea in Bulgaria. The study included a series of EMF field measurements around power cables that connect to the wind turbines near the closest four villages to the project. They concluded that EMF surrounding wind turbines and cables is so small that it is insignificant when compared to measurements in residential areas and homes and well below limits recommended by the European Council.

Popular Literature on Health Effects Associated with Wind Turbines - Wind Turbine Syndrome

Publication in reputable peer-reviewed scientific and medical journals is considered by the research community as the most appropriate way to disseminate scientific findings. Publication in these journals ensures that the research has been scrutinized by others and ultimately the findings could be reproduced. However, the general public does not often have access to these scientific journals (many require the researcher to conduct a search in academic databases and if retrieved many cost money to download and read) and often get their information and form opinions on sources that are less accountable (for example, the numerous claims on internet websites and from the popular literature (e.g., Dr. Nina Pierpont’s book)). These internet articles or books opining or speculating on theories related on living in proximity to wind turbines and health effect should be viewed with a certain amount of skepticism.

In 2009, Dr. Pierpont from New York released her wind turbine study in a book entitled Wind Turbine Syndrome: A Report on a Natural Experiment. Within her book she coined the phrase Wind Turbine Syndrome (WTS) and describes it as an illness in certain individuals that is potentially caused by wind turbine noise and vibration resulting in sleep disturbance, nausea, tinnitus, and other symptoms. Her book describes a case series of interviews that she conducted with 10 families that claim to be experiencing health effects of residing near turbines. However, although she speculates that these symptoms are related to noise or infrasound she did not conduct any of these measurements around the homes, and to our knowledge has never followed up.

Other commonly cited internet studies include those by Dr. Michael Nissenbaum from Mars Hill, Maine, and some claiming to have information on health effects in Ontario, Canada. Similar to those findings of Dr. Pierpont, none of these studies has been published in a credible peer-reviewed scientific journal that describes a dose-response relationship between noise, infrasound or any other emission from a turbine or power lines and people's self-reported health effects. In fact, in a recent Environmental Review Tribunal (ERT) decision in Ontario, Canada much of this internet research was presented by the authors and the tribunal found that their evidence was not sufficient to demonstrate that wind turbines would cause serious harm to health (ERT, 2011). Instead the tribunal appeared to place a higher weight of evidence on studies and researchers who had published their findings in scientific journals and the experts who had summarized that data.

A number of international governmental health agencies have also agreed during their review of the issue that noise from wind turbines is not loud enough to cause hearing impairment and are not causally related to adverse effects. These include

- Chief Medical Officer of Health (CMOH) Ontario: The Potential Health Impact of Wind Turbines. 2010.
- Australian Government. National Health and Medical Research Council: Wind Turbines and Health: A Rapid Review of the Evidence; 2010.

The same conclusion was also reached by the American Wind Energy Association (AWEA)/Canadian Wind Association (CanWEA) commissioned work entitled "Wind Turbine Sound and Health Effects: An Expert Panel Review" (Coby et al., 2009).

Annoyance and Wind Turbines

What both the popular literature and scientific publication on wind turbines have in common is the conclusion that wind turbines can be a source of annoyance for some people. The difference between the two opposing views is the reason for this annoyance and the extent to which it poses a health concern.

The peer reviewed and scientifically defensible studies suggest that annoyance and health effects are more strongly related to subjective factors like visual impact and attitude towards wind turbines, rather than the noise (both audible and LFN) itself (Pedersen, 2011; Pederson and Persson Waye, 2007). Self-reported health effects are more likely attributed to physical manifestation from an annoyed state than from wind turbines themselves. In other words, it appears that it is the change in the environment that is associated with reported health effects and not a turbine-specific variable like audible noise or infrasound (Knopper and Ollson, 2011).

Common Response 5: CDCA Plan Limited Use Areas

Several comments expressed concern that the Limited Use designation may change due to the Proposed Action or they opposed including the OWEF as a recognized element within the CDCA Plan.

The applicable BLM land use plan for purposes of the BLM-administered lands relevant to the Proposed Action is the California Desert Conservation Area Plan 1980, as amended (CDCA Plan). The CDCA Plan classifies the location of the proposed OWEF facility as Multiple-Use Class (MUC) L (Limited Use). As outlined in Table 1 (Multiple-Use Class Guidelines) of the CDCA Plan, wind energy facilities may be allowed within Limited Use areas after NEPA requirements are met. This Plan Amendment & EIS/EIR satisfies that requirement, and as a result the Proposed Action (including the Plan Amendment) would not change the multiple-use classification of the project site which would remain within the Limited Use designation.

In addition to MUC Class requirements applicable to locating a wind energy facility on MUC Class L lands designations, the "Energy Production and Utility Corridors Element" of the CDCA Plan requires that newly proposed power facilities that are not already identified in the CDCA Plan be considered through the Plan Amendment process. Since the proposed OWEF site is not currently identified within the CDCA Plan, the BLM had to consider, in connection with its consideration of the right-of-way application for the OWEF, a Plan Amendment that would include the facility as a recognized element within the CDCA Plan.

With completion of this EIS/EIR and approval of the Plan Amendment, the Proposed Action would be consistent with the CDCA Plan's Limited Use designation or other requirements of the CDCA Plan applicable to the construction of a wind generation facility on the OWEF project site.

Common Response 6: Incorporation by Reference of Material Submitted and Comments on other Documents

BLM recognizes that scientific research is very active in many areas addressed in this document. Several commenters referenced articles, reports, and studies as part of their technical and scientific comments and requested that materials be incorporated by reference (e.g., comments submitted by an organization for other projects), but were not submitted to BLM. BLM made every effort to retrieve and review publicly available material. BLM did not individually respond to each and every piece of literature submitted or incorporated by reference in comments. As with the comments, there was overlap in the literature received. BLM identified the relevant literature and previous comments on other projects that related to the substantive comments for the EIS/EIR and responded to those significant issues raised in the literature and comments incorporated by reference.

Common Response 7: Project Greenhouse Gas Emissions

While the proposed OWEF would have both direct and indirect GHG emissions, this renewable energy project would displace significantly more GHG emissions from fossil fuel combustion than it would ever cause to be emitted. While there is no doubt that the proper integration of renewable energy would substantially reduce GHG emissions, a number of comments on this issue were provided. So, to respond more completely to the comments on this topic, a general comment response has been provided.

This general response has been divided into three subparts: (1) renewable energy's role in reducing GHG emissions for the electricity sector; (2) wind energy's GHG emissions reduction potential; and (3) natural CO2 uptake and release.

Renewable Energy's Role in Reducing GHG Emissions for the Electricity Sector

The State of California's mandated Renewable Portfolio Standard (RPS) is one of the State's primary measures meant to reduce GHG emissions from the electricity generation sector. The State has proposed long-term emissions reductions from the electricity generation sector that are disproportionately large in order to achieve overall state-wide reductions. Renewable energy is a "must-take" resource that is integrated into the resource mix for State of California both as part of the regulated dispatch order and also as required for utilities to meet the current RPS of 20 percent and the future RPS that ramps up to 33 percent by 2020. Renewable energy has lower GHG emissions than traditional fossil fuel fired engines, boilers, or gas turbines. Properly integrated renewable energy will help create the emission reduction necessary for the State of California to meet its GHG emission reduction goals. There are some issues with renewable energy integration in areas that are dominated by coal or hydroelectric power; however, in California the large amount of highly dispatchable natural gas fired generating resources allows renewable energy to be integrated effectively without loss of hydroelectric power potential or cycling of coal-fired power plants that could potentially cause increases of CO2 emissions. Additionally, in the future if energy storage technologies become more cost effective, the issues concerning renewable energy integration will be significantly reduced.

Wind Energy's GHG Emissions Reduction Potential

Wind power has the lowest overall GHG footprint of any current renewable energy resource (Lenzen, 2008). Wind energy has no carbon emissions from electricity generation, a very small amount from maintenance operations, and smaller cradle-to-grave lifecycle emissions than other renewable energy sources like thermal or photovoltaic solar energy. The emission reduction potentials can range from 0.35 million tons (MT) CO2/MWh up to over 1 MT CO2/MWh in comparison to fossil-fuel fired resources. A comparison of life-cycle greenhouse gas intensity by technology is as follows:

Electricity Technology	Greenhouse Gas Intensity (MT CO2e/MWh)
Coal (various grades and technologies)	0.774 – 1.506
Natural Gas Simple Cycle Turbines	0.627 – 0.891
Natural Gas Combined Cycle Turbines	0.491 – 0.655
Photovoltaics	0.053 – 0.217
Wind Turbines	0.013 – 0.040

Source: Lenzen, 2008

The table above includes the direct stack emissions and the other life-cycle emissions sources, such as equipment and facility construction, fuel extraction and processing, transportation of fuels and wastes, etc. This table illustrates how much lower wind energy greenhouse gas emissions are in comparison with fossil fuel generation technologies.

Natural CO2 Uptake Loss and Release

The determination of natural CO2 uptake loss and potential soil disturbance CO2 release in desert environments is currently an inexact science. While reducing acres of vegetation will clearly reduce natural CO2 uptake the exact amount of that loss from vegetation and cryptobiotic soils and loss of potential additional caliche (calcium carbonate) formation in the soil is uncertain. Similarly, the potential for CO2 release from caliche due to soil disturbance is not well understood. In fact, the results of the gas exchange studies that have established high desert environment CO2 uptake values have been questioned as unreasonable considering the lack of corresponding physical biomass changes and the low annual potential for new caliche accumulation (Schlesinger, 2008). However, even assuming very conservative estimates for CO2 uptake loss and CO2 release from soils, the values are minor in comparison with the indirect CO2 emissions reductions from the OWEF electricity generation. The highest value of CO2 uptake loss plus CO2 release in the references provided in the public comments (150 grams per square meter per year) is only 50 percent higher than what was evaluated in the Draft EIS/EIR, where the Draft EIS/EIR using a CO2 uptake loss of 100 grams per square meter per year showed a more than three orders of magnitude difference between this effect and the indirect emission reductions from displacing fossil fuel fired energy generation (0.00027 MT CO2/MWh vs. 0.38 to 1.1 MT CO2/MWh). So, while the exact value of the CO2 uptake loss and CO2 release from disturbed soils may be at issue, the finding that it is a comparatively negligible effect is not at doubt.

It should be also noted that wind energy requires a site that has adequate wind, which is a much more constrained siting issue than adequate sunshine for solar power. Therefore, the argument that there should be a priority that distressed lands be used for renewable energy to reduce impacts, which is an argument provided in comment exhibits, including indirect GHG impacts from natural CO2 uptake loss and release, isn't a reasonable argument for wind power. In fact, the OWEF project site, given the very limited biologic production at this site, is probably as well suited or more suited to reduce GHG emissions than several of the other major wind energy resource areas in the state.

Common Response 8: Fugitive Dust Emissions and Mitigation

Fugitive dust emissions are a significant concern at the site as identified in the comments received. Part of this concern is the nearby location of the Ocotillo residential receptors that would often be directly downwind of these emissions sources. The magnitude of fugitive dust emissions during construction and operation has been conservatively estimated and feasible mitigation has been recommended to minimize the fugitive dust emissions potential. Diesel engine mitigation measures are also recommended that will reduce construction equipment engine tailpipe emissions. However, due to the construction activity intensity, the mitigated emissions estimate remains above the ICAPCD significance thresholds for both PM10 and for NOx and these temporary construction impacts have been identified as significant and unavoidable.

The mitigation measures include specific mitigation activities and mitigation performance requirements that are above and beyond the ICAPCD rule requirements to control fugitive dust generation from construction activities and from unpaved road travel. These mitigation measures will significantly reduce the fugitive dust emissions potential, including reducing the potential exposures to any *Coccidioidomycosis* spores, which cause Valley Fever, that may exist at the site. One commenter provided many references regarding Valley Fever but none was specifically relevant to the project area, and review of available California Department of Public Health incidence data (CDPH, 2010) suggests a comparatively low incidence of Valley Fever in Imperial County even though the county is known for periodic high wind caused dust events.

A number of public comments note the fact that the existing desert crust would be disturbed by the project's construction, and this would increase fugitive dust emissions potential. While it is true that the project would disturb the existing desert crust, the mitigation measures are designed to limit the amount of disturbance and also to mitigate this disturbance by requiring that all disturbed areas are stabilized and that those stabilized surfaces be maintained throughout the project life. This requirement in effect requires that new soil crusts be created and maintained in disturbed areas. It should also be noted that current recreational activities that occur at the project site also disturb the desert crust and these activities are unmitigated.

A review of the public comments and the recommended mitigation measures in the EIS/EIR indicates that the intent of requiring stabilized surfaces to be created and maintained through the project life through the use of non-toxic means may not be clear, so the measures have been edited to clarify this intent. To address the issues noted above and make the intent of the fugitive dust mitigation measures more clear, the following revisions have been made to the mitigation measures.

AIR-1…

2. All other onsite unpaved roads shall be effectively stabilized using non-toxic soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation. The proposed soil stabilizer(s) MSDS sheet and application strategy (method, frequency, and quantity) shall be provided to the BLM for approval prior to use.

…

14. Disturbed areas, after active construction activity has ceased, shall be stabilized using non-toxic soil stabilizers approved for project use and should be revegetated as soon as possible after disturbance.

AIR-3…

- The other unpaved roads at the site shall be stabilized using water or non-toxic soil stabilizers so that vehicle travel on these roads, or high winds, does not cause visible dust plumes.
- Disturbed areas that have been stabilized after active construction activity has ceased, shall be maintained as stabilized surfaces throughout the project's life.

Common Response 9: Adequacy of Use of Plans for Mitigation

The EIS/EIR does not improperly defer mitigation to a later date through the requirement of preparation of plans. The BLM and County are required to formulate measures to mitigate those impacts before the project is approved. (Cal. Code Regs., § 15126.4(a)(1)(B); *see Cal. Native Plant Society v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603, 621.) The NEPA requires an evaluation of all impacts and to propose mitigation to lessen those impacts. The CEQA, per the County's responsibility, is required to determine whether an action will have significant impacts, based on the impact reaching a specific threshold, and is required to propose mitigation measures that reduce the level of impact to less than significant. Establishing a commitment to mitigate the impacts of a project before it is approved, even if the details of a particular mitigation measure are unknown, satisfies this requirement. (*Cal. Native Plant Society*, *supra*, 172 Cal.App.4th at p. 621–22.) This may be especially appropriate where, as here, further studies are needed to determine the exact placement and design of the mitigation. (*See National Parks & Conservation Ass'n v. County of Riverside* (1999) 71 Cal.App.4th 1341, 1366.) For example, a Sedimentation and Erosion Control Plan needs to be customized for individual features of the project site (taking into account topography, surface soils, drainage, and nearby features that need protection) and for the specific activities that would occur at each location. The Plan also needs to be adapted to reflect different phases of construction activity. Therefore, the details regarding exactly where erosion control devices would be placed can be deferred pending the completion of engineering and construction designs. (*See, e.g.*, *Cal. Native Plant Society*, *supra*, 172 Cal.App.4th at p. 621–22 ["[T]he details of exactly how mitigation will be achieved under the identified measures can be deferred pending completion of a future study."]; *Sacramento Old City Ass'n v. City Council* (1991) 229 Cal.App.3d 1011, 1035–37 [holding that a mitigation measure stating that "[t]he City will require preparation of a Transportation Management Plan (TMP) to reduce project related traffic and parking impacts" and listing the City's goals for parking and traffic did not improperly defer mitigation].) This same principle applies to other plans required by the EIS/EIR as mitigation measures.

Those measures in the EIS/EIR that call for the preparation of plans as a component of a mitigation measure provide adequate descriptions of the intent of these plans, the required content for these plans, and performance standards for implementation of mitigation actions, as feasible. The mitigation measures also indicate where certain plans must be reviewed and approved by appropriate agencies and, where applicable, must conform to established protocols or guidance promulgated by responsible resource agencies, such as the US Fish and Wildlife Service. A list of the plans called out in comment letters and analysis of the adequacy of the mitigation is provided in section **9A** below.

Several comments have stated that various plans mentioned in the Draft EIS/EIR, such as the Construction Waste Management Plan, improperly defer mitigation but those plans are not proposed as mitigation measures. Rather, they are plans that the Applicant has volunteered to prepare to demonstrate how they intend to manage various aspects of project construction and operation. The EIS/EIR does not rely on these plans for mitigation of impacts, although the measures in these plans may very well help reduce impacts and could be used as a means to help implement required mitigation adopted by the Lead Agencies. Because such plans are not mitigation measures, they are not subject to claims of improper deferment. Plans that fall into this category are listed in section **9B**, which follows section 9A, below.

9A: Plans Constituting Mitigation Measures

Air Resources

Fugitive Dust Control Plan (Mitigation Measure Air-1): This mitigation measure, found in Section 4.2, has been modified in part as shown below:

The following dust control measures shall be implemented:

1. The road leading to the operations and maintenance facility shall be paved as early as practical during construction.
2. All other onsite unpaved roads shall be effectively stabilized using soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than California Air Resources Board approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.
3. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles are watered hourly for the duration of construction or covered with temporary coverings.
4. Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and when those activities cause visible dust

plumes. All grading activities shall be suspended when wind speeds are greater than 30 miles per hour.

5. Track-out shall not extend 25 feet or more from an active operation and track-out shall be removed at the conclusion of each workday.
6. A wheel-washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the proposed project property.
7. All hauling materials shall be moist while being loaded into dump trucks. All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
8. Soil loads shall be kept below 18 inches or the freeboard of the truck.
9. Drop heights shall be minimized when loaders dump soil into trucks.
10. Gate seals should be tight on dump trucks.
11. Traffic speeds on unpaved roads shall be limited to 15 miles per hour.
12. Other fugitive dust control measures as necessary to comply with Imperial County Air Pollution Control District Rules and Regulations.
13. Disturbed areas shall be minimized.
14. Disturbed areas shall be revegetated as soon as possible after disturbance.

This mitigation measure does not impermissibly defer analysis. The mitigation measure states that the intent of this plan is "to reduce Particulate Matter 10 and Fine Particulate Matter 2.5 emissions during construction." The mitigation measure lists the specific information to be included in the plan and the plan's performance criteria. Further, the plan must meet the criteria set forth in Regulation VIII of the rules (rules 800-806) for the Imperial County Air Pollution Control District.

Cultural Resources

Cultural Resources Management Plan (CRMP) (Mitigation Measure Cul-3): This mitigation measure, found in Section 4.4, does not impermissibly defer analysis. The mitigation measure states that the plan's intent is "to ensure the effectiveness of [Environmentally Sensitive Areas (ESAs)]." The mitigation measure also specifies the information that will be in the CRMP, and explains the procedures that must be followed if there are unanticipated discoveries of cultural resources.

Lands & Realty

Decommissioning Plan (Mitigation Measure Lands-3): This mitigation measure, found in Section 4.6, does not impermissibly defer analysis. The mitigation measure states that the plan's intent is to "ensure that decommissioning is conducted in accordance with then-current land use plans, policies, or regulations." The mitigation measure also lists the items that will be included in the plan and performance standards. For example, property owners must "be provided with a detailed decommissioning schedule at least 30 days prior to decommissioning" that informs the owners of "the time and location of [the] disturbance."

Noise

BMPs for Construction Activities (Section 4.9): This mitigation measure does not impermissibly defer analysis. The stated intent of these best management practices is to limit noise. The Final EIS/EIR lists six specific methods that explain the various techniques that will be used to minimize noise from the project, and for unavoidable construction noise, ensure that those affected by the noise will have advance notice of it.

Public Health & Safety

Geotechnical Study (Mitigation Measure PHS-3): This mitigation measure, found in Section 4.11, does not impermissibly defer analysis. The mitigation measure explains that the purpose of the study is "to evaluate soil conditions and geologic hazards on the project site." The mitigation measure lists what must be in the study and that a California-registered professional engineer must sign the study. The mitigation measure also requires the Applicant to use the study to determine the final siting of project facilities. If the study indicates that there is a fault trace, the mitigation measure requires the Applicant to avoid siting structures on it or adjacent to it. Final siting design will be evaluated by the BLM and Imperial County Planning & Development Services to ensure that geological constraints have been avoided.

Soil Resources

Conduct Geotechnical Studies to Assess Soil Characteristics and Aid in Appropriate Foundation Design (Mitigation Measure Soil-1): This mitigation measure, found in Section 4.14, does not impermissibly defer analysis. The mitigation measure has the purpose of ensuring that foundations are designed to resist corrosion and be safe. The mitigation measure lists examples of the types of methods that may be suitable for designing corrosion-resistant foundations and steps that must be taken to avoid being surprised by the presence of expansive or collapsible soils during construction. The soil studies must "conform to industry standards of care and American Society for Testing and Materials (ASTM) standards for field and laboratory testing," which provides the necessary performance criteria. Further, study results and proposed solutions shall be provided for review and approval to the BLM, for actions on BLM lands, and to Imperial County, for actions on County lands, at least 60 days before final project design.

Transportation & Public Access

Transportation Plan (BMPs from BLM's Wind Programmatic EIS): The Transportation Plan, found in Section 4.16, has been revised as shown below:

> A transportation plan shall be developed~~, particularly~~ for the transport of turbine components, main assembly cranes, and other large pieces of equipment that may be necessary to complete the project to ensure compliance with all state and local transportation laws. The plan shall consider specific object sizes, weights, origin, destination, and unique handling requirements and shall evaluate alternative transportation approaches. Based on the conclusions drawn from those considerations and evaluations, the Applicant shall use the approach that minimizes traffic disruption and miles driven. In addition, the process ~~to~~ that will be used to comply with unique state requirements and to obtain all necessary permits shall be clearly identified and followed.

This mitigation measure does not impermissibly defer analysis. The intent of the mitigation is "to ensure compliance with all state and local transportation laws." And, the measure states that such laws will be followed. The mitigation measure also states the contents of the plan and the performance criteria that will be used to determine if the measure has been satisfied.

Traffic Management Plan (BMPs from BLM's Wind Programmatic EIS): The Traffic Management Plan, found in Section 4.16, has been revised as shown below:

> A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. ~~This plan shall incorporate measures such as informational signs, flaggers when equipment may result in~~ Under this plan, informational signs will be used to inform the public of temporary traffic hazards, flaggers will be employed when equipment will block throughways, and traffic cones will be used to identify any necessary changes in temporary lane configuration.

This mitigation measure does not impermissibly defer analysis. The mitigation measure defines the intent of the plan, which is "to ensure that no hazards will result from the increased truck traffic" and to ensure "that traffic flow will not be adversely impacted." The measure also includes a description of the plan's directives and the criteria that will be used to implement the plan.

Wildland Fire Resources

Fire Safety Plan (Mitigation Measure Fire-1): This mitigation measure, found in Section 4.20, does not impermissibly defer analysis. The mitigation measure discloses that the intent of the plan is to ensure that there are "notification procedures and emergency fire precautions" in place. The mitigation measure includes a list of procedures that must be followed and states that the BLM FIRE and Imperial County Fire Marshall must approve the plan.

Vegetation Resources

Special Status Plant Species Avoidance/Restoration/Compensation (Mitigation Measure Veg-1c): This mitigation measure, found in Section 4.17, does not impermissibly defer analysis. The mitigation measure describes who must conduct surveys for special status plan species and when and where those surveys must occur. The mitigation measure also gives criteria for determining where construction activity should occur, which is a place other than where there are special status species if at all feasible. The mitigation measure explains that there will be descriptions of methods to salvage soil and seed in areas containing special status plant species for use in the revegetation of temporary impact areas, including the use of container stock and seed of the affected special status plant species for use in restoration/revegetation areas.

Integrated Weed Management Plan (Mitigation Measure Veg-1d): This mitigation measure, found in Section 4.17, does not impermissibly defer analysis. The mitigation measure explains that the intent of this plan is "to control non-native invasive weeds." The mitigation measure also lists the contents of the plan; the plan "shall include a risk assessment of the invasive weed species currently known within the proposed OWEF site, procedures to control their spread on site and to adjacent off-site areas, and procedures to help minimize the introduction of new weed species." Finally, the mitigation measure states how and when the plan must be implemented: "The Integrated Weed Management Plan shall be submitted to the BLM and County for review and approval prior to the start of construction and shall be implemented prior to, during, and following the completion of construction for the life of the project."

Habitat Restoration / Revegetation Plan ("HRRP") (Mitigation Measure Veg-2b): This mitigation measure, found in Section 4.17, has been modified as shown below:

> Temporarily disturbed areas shall be revegetated according to a Habitat Restoration/ Revegetation Plan (HRRP) approved by the BLM and Wildlife Agencies. The HRRP must be approved in writing prior to the initiation of any vegetation disturbing activities. Restoration involves recontouring the land and replacing topsoil (if it was collected). Revegetation also involves planting seed and/or container stock, maintaining the plantings (e.g., weeding, replacement planting, supplemental watering), and monitoring the restored/revegetated areas for a period of at least five years (or until the restoration/ revegetation meets all success criteria). The HRRP shall include methods to salvage soil and seed in areas containing special status plant species for use in the revegetation of temporary impact areas, and shall include container stock and seed of the affected special status plant species for use in restoration/revegetation areas. Restoration measures in desert environments include alleviating soil compaction, returning the surface to its original contours, pitting or imprinting the surface to allow small areas where seeds and rain water can be captured, planting seedlings with root mass necessary to survive without watering, planting seedlings in the spring with herbivory cages, broadcasting locally collected seed immediately prior to the rainy season, and covering seeds with mulch. The final success criteria for restored/revegetated areas are as follows: (1) Native vegetation cover measured within revegetated areas should be at least 70 percent of that measured at reference sites located in similar habitat; (2) non-native vegetation cover within revegetated areas should be equal to or less than that measured at reference sites located in similar habitat, and (3) recruitment (the successful, natural reproduction and/or establishment of plants in a given area) of native plants should demonstrate at least 40 percent of the recruitment observed in a reference site located in similar habitat. If after five years of monitoring there are areas that do not meet the success criteria ~~outlined in the HRRP~~, these areas shall be compensated off site at a 1:1 ratio of equal or better quality habitat compared to what was impacted, in accordance with Mitigation Measure Veg-2a.

This mitigation measure does not impermissibly defer analysis. The mitigation measure states that the intent of this plan is to ensure that "[t]emporarily disturbed areas shall be revegetated" through "restoration" and/or "revegetation." The mitigation measure also explains the required content for the HRRP, offers examples of the types of restoration measures that may be used, and outlines the performance criteria that will be used to determine whether restoration or revegetation has been successful. The HRRP must be approved by the BLM and wildlife agencies prior to any vegetation disturbing activities occurring.

Jurisdictional Mitigation Plan (Mitigation Measure Veg-3): This mitigation measure, found in Section 4.17, has been revised as shown below:

> The Applicant shall implement a Jurisdictional Mitigation Plan to describe the mitigation for impacts to jurisdictional areas within the proposed OWEF site. The Jurisdictional Mitigation Plan shall be submitted to the ACOE, Regional Water Quality Control Board (RWQCB), and CDFG for review and approval and shall describe the location and size of the mitigation proposed, description of the habitat creation/restoration effort, success criteria, and maintenance and monitoring specifications. The Applicant proposes to remove dense, mature stands of tamarisk within the approximately 318-acre Carrizo Marsh to mitigate impacts to jurisdictional areas,

> which is described in the Draft Off-site Habitat Restoration Plan. The final success criteria in the Draft Off-site Habitat Restoration Plan are as follows: 0 percent cover of tamarisk in the shrub layer; less than 5 percent cover of tamarisk in the herb layer; less than 5 percent cover by other noxious weed species; and less than 20 percent cover by other non-native species at the end of 5 years of maintenance.

This mitigation measure does not impermissibly defer analysis. The mitigation measure states that the plan's purpose is to "describe the mitigation for impacts to jurisdictional areas within the proposed OWEF site." The contents of the plan must include the location and size of the proposed mitigation, a description of the habitat creation/restoration effort, the success criteria that will be used to judge the habitat creation/restoration effort, and maintenance and monitoring specifications. The mitigation measure includes performance criteria and the plan must be reviewed and approved by the ACOE, Regional Water Quality Control Board, and CDFG.

Water Resources

Water Supply Contingency Plan for Construction (Mitigation Measure Water-2): This mitigation measure, found in Section 4.19, does not impermissibly defer analysis. The mitigation measure states that the intent of the plan is to "identify the well sites, proximity to other active wells, estimated total depth, well screen depth, diameter, estimated yield and water quality, and time required to have the wells drilled, constructed, developed and fully operational (if the wells are to be drilled specifically for the project, as opposed to use of existing wells)." The mitigation measure outlines procedures for the use of the wells and specifies that an Environmental Monitor will ensure compliance with the plan.

Groundwater Monitoring and Reporting Plan (Mitigation Measure Water-3): This mitigation measure, found in Section 4.19, does not impermissibly defer analysis. The mitigation measure states that the intent of the plan is to "provide detailed methodology for monitoring background and site groundwater levels, water quality, and flow." The measure lists the content that must be in the reports, including the types of sampling and tests that must be done, as well as a schedule for submitting quarterly monitoring data reports to the BLM. The measure also includes criteria for choosing the location of the monitoring wells and determining when monitoring must be performed. The plan must be approved by the BLM before construction begins, and the BLM will review the quarterly monitoring reports. The text for how the BLM will review the quarterly monitoring reports has now been revised to include additional performance criteria, as shown below:

> The Plan shall include a schedule for submittal of quarterly monitoring data reports by the Applicant to the BLM. The BLM shall review these quarterly reports with consideration to the following criteria:
>
> - Where water level monitoring has indicated drawdown of five feet or more, the Applicant has immediately reduced groundwater pumping until water levels recover and stabilize or the Applicant has provided compensation to the well owner;
> - Sustained drawdown of five feet or more has not occurred at off-site wells; and
> - Substantial groundwater quality degradation has not occurred in water drawn from the project's supply well(s) or off-site wells (such as increased TDS concentrations that may result from over-pumping).
>
> Per the criteria listed above, the BLM shall determine whether ~~groundwater wells surrounding the project site and project supply well(s) are affected by project activities in a way that requires~~

additional mitigation is necessary to reduce adverse impacts to groundwater resources and groundwater wells surrounding the project site. Such additional mitigation efforts, as determined by the BLM to be appropriate, may include but are not limited to the following: reduced rate of groundwater pumping; use of an alternative water source; water conservation activities. ~~and, if so, shall determine what measures are needed.~~

Install Pervious and/or High-Roughness Groundcover Where Applicable (Mitigation Measure Water-4): This mitigation measure, found in Section 4.19, which calls for a "drainage design and hydrologic and hydraulic analysis" to be submitted to the BLM for review and approval and to the Imperial County Department of Planning and Building for review and comment, does not impermissibly defer analysis. The intent of the mitigation measure is to provide sufficient "percolation" after rain and "erosion protection." The measure provides performance criteria for the design of the groundcover for the new substation, the placement of detention/retention basins, and the design of the downstream drainage discharge points.

Design onsite drainage improvements to maximize groundwater recharge (Mitigation Measure Water-5): This mitigation measure, found in Section 4.19, which requires the Applicant to design on-site drainage improvements, does not impermissibly defer analysis. The intent of the mitigation measure is to "maximize groundwater basin recharge." The measure states that the Applicant's design must adhere to the following criteria to accomplish this goal: "drainage from impervious surfaces (e.g., roads, driveways, buildings) shall be directed to a common drainage basin; the project shall design as few basins as possible for the entire development; and where feasible, mass grading and contouring shall be done in a way to direct surface runoff towards the above-referenced basins (and/or closed depressions)."

Construction Site Dewatering Management (Mitigation Measure Water-6): This mitigation measure, found in Section 4.19, does not impermissibly defer analysis. The mitigation measure explains that the intent of this measure is to address what to do if groundwater is "unexpectedly encountered during construction, operation, or decommissioning of the OWEF." The measure states where to find the performance criteria for dewatering activities: "dewatering activities shall be performed in compliance with the California Stormwater Quality Association (CASQA) Handbook for Construction or other similar guidelines, as approved by the BLM, for actions on BLM lands, and/or by Imperial County, for actions on County lands." The mitigation measure requires the Applicant to "notify the BLM and applicable County (Imperial and/or Sand Diego) and RWQCB (Colorado River Basin RWQCB for activities at the proposed OWEF site, and/or San Diego Basin RWQCB for activities at the proposed water source in Pine Valley) at the onset of dewatering" and describes the contents of the written descriptions of dewatering efforts that must be submitted to the relevant agency. Further, the mitigation measure requires that dewatering efforts "be verified by the recognized local authority (RWQCB or Department of Planning and Building)."

Develop Master Drought Water Management and Water Conservation Education Programs (Mitigation Measure Water-7): This mitigation measure, found in Section 4.19, does not impermissibly defer analysis. The mitigation measure requires the preparation of a master Drought Water Management Program, which must be approved by the BLM. The mitigation measure explains that the purpose of the master Drought Water Management Program is to "provide guidelines on how all future water use will be managed during 'severe' drought year(s)." The mitigation measure lists the contents of this plan and states the criteria that will be used to determine when the guidelines in this plan must be implemented. The mitigation measure also requires the preparation of a master Water Conservation Education Program. The mitigation measure states that the purpose of the program is to ensure that "future operators and employees" are informed about what to do during drought periods. The measure includes the contents of the program, which must address "each on-site activity using water." The mitigation measure also states that the program must explain "the means by which this information will be disseminated to any future operators of the project."

Flood and Erosion Structure Damage Protection (Mitigation Measure Water-8): This mitigation measure, found in Section 4.19, does not impermissibly defer analysis. The mitigation measure has specific rules for design and placement of aboveground project features, such that those features do not increase flood or erosion risks. The applicable floodplain development guidelines offer performance criteria for the design of aboveground structures that must be placed within 100-year floodplain boundaries or Flood Hazard Areas.

Storm Water Pollution Prevention Plan (SWPPP) (Mitigation Measure Water-9): The Storm Water Pollution Prevention Plan, found in Section 4.19, does not impermissibly defer analysis. The mitigation measure includes the plan's intent, which is to provide methods "to stabilize graded areas and waterways, and reduce erosion and sedimentation." In addition, the methods that are to be used to achieve the goal are listed, and an Environmental Monitor will ensure that the listed methods are properly implemented.

Wildlife Resources

Property Assessment Report (part of Mitigation Measure Wild-1h): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure explains the method required to compensate the loss of occupied FTHL habitat. If off-site purchase of FTHL habitat is proposed as a way to compensate for the loss of FTHL habitat, the Applicant must obtain approval of the BLM, FTHL Interagency Coordinating Committee, and Wildlife Agencies prior to the purchase, and shall ensure long-term management and protection of the land in part by preparing a Property Assessment Report. The mitigation measure discloses that the purpose of the report is to determine the long-term management funding for protection of the purchased FTHL habitat and specifies performance criteria for the report, as the report must be tailored to the specific acquisition proposed.

Raven Control Plan (Mitigation Measure Wild-1j): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure states that the intent of the plan is to explain to operators and employees the purpose of conducting raven control and how to do so. The mitigation measure outlines the contents of the plan, and proscribes the performance criteria that were used in the Raven Control Plan prepared for the Sunrise Powerlink project, which crosses through the proposed OWEF.

Wildlife Mortality Reporting Program (Wild-1ee): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The purpose of the program, found in Section 4.21, is to ensure that impacts to wildlife species from O&M of the proposed OWEF are avoided or reduced by requiring reporting during construction and O&M. The reports will be used to determine if the Applicant has complied with the avoidance and minimization measures, to assess the effectiveness of the measures, and to make recommendations, if necessary, for future compliance. The mitigation measure lists the actions required by the program as "the identification and reporting of any dead or injured animals observed by personnel conducting O&M activities."

Burrowing Owl Mitigation & Monitoring Program (Mitigation Measure Wild-2a): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure states that the intent of the program is to "determine the presence or absence of the burrowing owl in the construction zone plus 250 feet beyond" prior to construction. The mitigation measure states that the program shall consist of a survey performed by a qualified biologist and the steps that must be taken if the biologist detects a burrowing owl. In addition, the BLM and CDFG will review the survey and must concur with it prior to the start of construction.

Bighorn Sheep Mitigation & Monitoring Program (Mitigation Measures Wild-1s and Wild-1t): This mitigation measure, found in Section 4.21, has been modified as shown below:

> Prior to construction, a Bighorn Sheep Mitigation and Monitoring Plan shall be submitted to the BLM, USFWS, and CDFG for review and approval. The monitoring plan shall describe the monitoring and reporting procedures and the construction limitations to be implemented if sheep are observed in the proposed OWEF site. The monitoring procedures must comply with the standards set by USFWS and CDFG for performing bighorn sheep monitoring.
>
> A biological consultant approved by the BLM, USFWS, and CDFG shall be retained by the Applicant to serve as the Bighorn Sheep Monitor of construction activities within USFWS Essential Habitat on the proposed OWEF site, in accordance with the Bighorn Sheep Mitigation and Monitoring Plan for the proposed OWEF. The Bighorn Sheep Monitor shall be present if proposed OWEF activities are planned within 300 meters (approximately 1,000 feet) of Essential Habitat. If PBS are observed within the Action Area, no construction activities shall be conducted within 1,000 feet of the sheep until the Bighorn Sheep Monitor verifies that the sheep have moved to at least 1,000 feet from planned activities. If the Bighorn Sheep Monitor determines that proposed OWEF activities are unlikely to adversely affect or disrupt normal behavior of the PBS, planned activities may proceed. If the Bighorn Sheep Monitor is not present on site when sheep are observed, all proposed OWEF activities within 1,000 feet of Essential Habitat will stop, and the Bighorn Sheep Monitor shall be contacted immediately for guidance on how to proceed with planned activities. The Bighorn Sheep Monitor shall have complete access to the Applicant's proposed biological observation tower and radar and camera system. The Bighorn Sheep Monitor shall prepare daily monitoring reports that will be submitted to the Designated Biologist and BLM, as well as to the USFWS and CDFG ~~(if requested)~~.

This mitigation measure does not impermissibly defer analysis. The mitigation measure explains that the intent of the plan is to protect Bighorn Sheep. The mitigation measure sets forth that the plan will contain monitoring and reporting procedures and states the performance criteria for monitoring and the method required for reporting, as well as the procedures that must be followed if a bighorn sheep is spotted during construction activities.

Avian and Bat Protection Plan (Mitigation Measure Wild-1p): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure states that the intent of the plan is to "address proposed OWEF impacts to special status avian and bat species." According to the mitigation measure, the plan must include monitoring, adaptive management, and reporting procedures; the post-construction monitoring methods must be based on the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development. The mitigation measure sets performance standards by mandating that the Applicant develop an Avian and Bat Protection Plan in accordance with the interim guidance provided by USFWS. A draft of the plan is available on Imperial County Planning & Development Services website, which is at http://www.icpds.com/?pid=2843, and in Appendix L6 of the Final EIS/EIR.

Eagle Conservation Plan (Mitigation Measure Wild-1o): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure states that the plan's intent is to "address proposed OWEF impacts to golden eagles." The mitigation measure also explains that the plan will consist of a description "of the golden eagle studies completed for the proposed OWEF; a risk analysis; advanced conservation practices to be implemented during operations, including a description of the adaptive management strategy for the proposed OWEF and compensatory mitigation; and post-construction monitoring and reporting procedures for golden eagles." The mitigation measure sets performance standards by requiring that the plan be prepared in accordance with the Draft Eagle Conservation Plan Guidance, published by the USFWS. A draft of the plan is available on Imperial County Planning & Development Services website, which is at http://www.icpds.com/?pid=2843, and in Appendix L9 of the Final EIS/EIR.

Barefoot Banded Gecko Survey (Mitigation Measure Wild-1k): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure describes the actions that must be taken prior to the start of construction to determine the presence of barefoot banded geckos. The mitigation measure proscribes where and how the gecko surveys must be performed, and sets forth procedures that the Applicant must follow if a gecko is detected.

Additional Burrowing Owl Surveys (Mitigation Measure Wild-1l): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure describes when, where, and how additional burrowing owl surveys must be performed. The California Burrowing Owl Consortium Guidelines provide the performance criteria for the surveys.

American Badger Surveys (Mitigation Measure Wild-2c): This mitigation measure, found in Section 4.21, does not impermissibly defer analysis. The mitigation measure describes when a badger survey must occur, who must perform the survey, and the steps that must be taken if a badger or active den or inactive den is detected.

9B: Plans that are not Required Mitigation Measures

The table below lists plans that the Applicant has proposed to create or that comprise part of the regulatory framework for the project, but that were not adopted as required mitigation measures:

Title / Description	Page
Dust Abatement Plan	2-18
Construction Waste Management Plan	2-19
Noxious Weed Control Program	2-20
Integrated Pest Management Program	2-20
Construction, Operation & Maintenance (COM) Plan	3.12-4
Spill Prevention Containment and Countermeasure Plan & Monitoring	3.12-8
Risk Management Plan	3.12-10
Hazardous Materials Business Plan	3.12-10
Hazardous Materials Release Response Plan	3.12-10
Construction Waste Management Plan	3.12-11

Common Response 10: Water Supply

Water Demands of the Proposed OWEF Project

As discussed in the Draft EIS/EIR, construction of the proposed OWEF would require a water supply for concrete batching, road maintenance, and dust suppression totaling 50 acre-feet. Water for dust suppression would only be required during construction of the project; construction and operational water requirements are assessed in Section 4.19 of the Final EIS/EIR. Water demands associated with construction of the project are described in Table 4.19-1 on page 4.19-4 of the Final EIS/EIR, while water demands associated with operation and maintenance of the project are described on pages 4.19-14 and 4.19-15 of the Final EIS/EIR.

Sources of Water for the Proposed OWEF

Since the date of publication of the Draft EIS/EIR, the project Applicant has provided additional information regarding the potential sources of water for the proposed OWEF. Revisions incorporated into the Final EIS/EIR regarding source(s) of water for the proposed OWEF are shown below.

Pages 3.20-2 and 3.20-3

> Surface water and groundwater resources in the proposed OWEF area are discussed in Sections 3.20.1.1 and 3.20.1.2, respectively. The water supply required for construction, operation, and decommissioning of the proposed OWEF is proposed to be obtained from a private groundwater well in the Pine Valley area of eastern San Diego County (groundwater resources are described in detail in Section 3.20.1.2). In addition to the Pine Valley groundwater source, other sources of water that may be used to meet the project's water supply requirements include the following: City of Brawley treated municipal water, Vulcan Materials Dixieland Mine groundwater supply well, Seeley County Water District (SCWD) treated municipal water, and Imperial Irrigation District (IID) West-Side Canal water. Each of these water sources are summarized below and further discussed throughout this section and in Section 4.19, as applicable.
>
> - **Pine Valley – private groundwater supply well.** Water may be purchased from a private well owner near Pine Valley, approximately 50 miles west of the Proposed Action site, and trucked to the project site. Pine Valley groundwater resources are discussed in detail, in Section 3.20.1.2 (see "Campo-Cottonwood Sole Source Aquifer"), and in the discussions under "Water Supply Reliability" subheadings throughout Section 4.19. Pine Valley groundwater resources are also discussed in a report provided by the Applicant and included as Appendix P to this EIS/EIR. The discussions of water supply reliability presented throughout this section and Section 4.19 focus primarily on Pine Valley groundwater because the other potential water sources identified for the project are either regulated under existing management plans and/or have been assessed under other studies or plans which demonstrate their supply reliability and are incorporated by reference throughout this EIS/EIR; the Pine Valley area is non-adjudicated (dicussed further in Section 3.20.1.2) and this groundwater source is the only potential water source for the project which is not regulated or managed under an existing law, plan, or permit with respect to supply reliability.
>
>   The County of San Diego, Department of Planning and Land Use, has determined that the selling (or giving) of groundwater pumped from this Pine Valley well can be considered legal

nonconforming and therefore subject to Nonconformity Regulations of the San Diego County Zoning Ordinance §6852, and that Existing Groundwater Extraction Operations as described in San Diego County Zoning Ordinance §6864 may occur (County of San Diego, 2003). Accordingly, the same quantity of water which has historically been exported from this well (understood to be 28 afy) may continue to be exported as a permissible activity, and would not require a modification permit from San Diego County. Increasing the quantity of water exported from this well would require a Major Use Permit from the County. The private well owner and the project Applicant are actively coordinating with the County to ensure compliance with all Zoning Ordinances and associated permitting requirements; for instance, if it is determined that the project's use of this Pine Valley well would cause the groundwater export rate to exceed 28 afy and require a modification permit from San Diego County. The County's ordinances are discussed in Section 3.20.2.3, under "San Diego County."

- **City of Brawley - treated municipal wastewater.** The City of Brawley, located approximately 45 miles northeast of the community of Ocotillo, has provided written confirmation to the project Applicant that the City is able to provide up to 250,000 gallons of water per day, or approximately 0.76 acre-feet per day, for the period commencing December 2011 through December 2012 (City of Brawley, 2011); this is a peak pumpage rate and it is anticipated that the actual daily quantity of water provided by the City of Brawley for the project would fluctuate, and would total a quantity agreed upon between the Applicant and the City of Brawley in a written contract that would be finalized prior to the onset of project construction, if this source is used to meet the project's water supply requirements. City of Brawley water would be provided as treated municipal wastewater from the city's water treatment plant, which has existing capacity to treat 16,800 acre-feet per year (afy) of water and an anticipated capability of expanding to 33,600 afy (City of Brawley, 2010). The City of Brawley completed an Urban Water Management Plan (UWMP) in 2010; in accordance with California Water Code §10612(b), the UWMP includes assessment of current demands and supplies over a 20-year planning horizon and consider various drought scenarios. The Brawley water source is east of the project site, with a travel distance for water trucks of approximately 39 miles one way.

- **SCWD – treated municipal wastewater.** The Seeley County Water District owns and operates the water treatment and distribution system infrastructure in the unincorporated community of Seeley, located approximately eight miles west of El Centro and ten miles north of the U.S.-Mexico border (BECC, 2011). Due to the size of the SCWD water distribution system, an UWMP is not required per California Water Code Sections 10610 through 10656 (IID, 2009). However, the SCWD enacts demand management measures (DDMs) published by the California Urban Water Conservation Council (CUWCC) and supported by DWR, which are typlically included as part of an UWMP (IID, 2009). SCWD could provide a source water for the proposed OWEF, in the form of treated municipal water from the Seeley County Wastewater Treatment Plant (WWTP). The Seeley County WWTP houses a series of five treatment ponds, including two 0.12-acre "reactor" ponds and three 0.14-acre sedimentation ponds (CEC, 2010). The treatment facility discharges effluent treated to secondary standards via an unlined channel to the New River, and operates under a New River discharge permit from the RWQCB (CEC, 2010). The Seeley County WWTP has an average demand of 0.245 million gallons per day (gpd), although the current capacity of the WWTP is 1.08 million gpd (IID, 2009). As such, the WWTP has sufficient capacity to meet the water supply requirements of the proposed OWEF.

- **Vulcan Materials - Dixieland Mine groundwater supply well.** Water pumped from an existing supply well at the Dixieland Mine, east of the project site, may be purchased from the Vulcan Materials Company, which operates the well under a Conditional Use Permit (CUP) issued by Imperial County. The existing CUP allows for brackish water from the Dixieland Mine well to be used on-site for dust control and mining operations (Imperial County, 2005). The CUP limits annual groundwater pumping from this well to 200 afy, and specifies that the groundwater may only be used on the Dixieland Mine property (Imperial County, 2005). The County of Imperial has indicated that an amendment to the CUP may be sought to allow for off-site use of this water (Pattern, 2011). A groundwater investigation was conducted at the Dixieland Mine site in 2005, prior to installation of the well (EMKO, 2005). This investigation is discussed in Section 3.20.1.2 (see "Dixieland Mine Groundwater"). The Dixieland water source is east of the project site, with a travel distance for water trucks of approximately 15 miles one way.
- **IID - West-Site Canal water.** Water may be purchased from the IID and transported by truck from canals near Dixieland, approximately 20 miles to the east of the OWEF site. Only lands within the All-American Canal (AAC) Service Area Boundary can receive water from the IID, unless IID agrees to sell or lease conserved water pursuant to a water conservation and transfer agreement. The Applicant has contacted the IID about obtaining raw canal water from the West-Side Canal for the project, and IID indicated that approximately 25 afy of canal water may be obtained through the Interim Water Supply Policy for Non-Agricultural Projects (Pattern, 2011). The IWSP for Non-Agricultural Projects currently designates up to 25,000 afy of water for potential Non-Agricultural Projects within IID's water service area, to be available for other users until such Non-Agricultural Projects are implemented and require the reserved water supply (IID, 2009c). Use of IID canal water outside of the IID service area, but within Imperial County, would require approval from the San Diego County Water Authority (SDCWA) due to contractual water conservation and transfer agreements between Imperial County and the SDCWA; negotiations between IID and SDCEA are near completion to allow the use of IID canal water for construction purposes throughout Imperial County (Pattern, 2011).

The following sections characterize the existing environmental setting for the proposed OWEF Study Area, including information relevant to surface water drainage, flooding, water quality, and groundwater resources.

Pages 3.20-5 and 3.20-6

The proposed OWEF is located within the surface recharge area of the Ocotillo-Coyote Wells Sole Source Aquifer (SSA), and the construction water source identified near Pine Valley is located within the surface recharge area of the Campo-Cottonwood SSA (see Figures 3.20-4 and 3.20-5). A sole source aquifer is an area of groundwater resources defined by the U.S. Environmental Protection Agency (EPA) as an aquifer which supplies more than 50 percent of a community's drinking water. Any project which receives a federal grant or loan guarantee and which has the potential to contaminate a sole source aquifer, as determined by the EPA, should be modified to reduce or eliminate the risk. As described below in Section 3.20.2.1, Section 1424(e) of the U.S. Safe Drinking Water Act (SDWA) authorizes the EPA to evaluate projects located within a designated SSA, if the project is financially assisted by federal grants or federal loan guarantees. The proposed OWEF is subject to EPA review to determine whether the project should be modified to reduce or eliminate potential risk of contamination to a designated SSA. Since publication of the Draft EIS/EIR for the proposed OWEF, the EPA has determined that the project will not adversely affect the Ocotillo-Coyote Wells sole source aquifer (EPA, 2011b).

Pages 3.20-12 through 3.20-14

Monitoring and/or modeling data sufficient to indicate whether this area is affected by groundwater overdraft is not currently available. As described above, in the absence of quantitative long-term data, the presence of environmental effects of overdraft including consistently declining water levels, water quality degradation, and/or land subsidence may be used to make reasonable assumptions about overdraft conditions. In the Pine Valley area, there is no record of declining groundwater levels, declining groundwater quality, and/or land subsidence. In addition, the groundwater well proposed for use under the proposed OWEF is currently used as a water supply for other projects on non-overlying lands, which would be prohibited if the groundwater were in overdraft conditions. Due to all of these factors, it is reasonably assumed that the Pine Valley area is not affected by long-term overdraft conditions. Based on anecdotal information from the private well owner, groundwater supply availability is unaffected by normal year, dry year, and multiple dry years conditions; based on the well owner's experience, the well has historically not experienced variation in supply during drought years (NAA, 2011b). This issue is discussed further in Section 4.19.

In May of 2003, the County of San Diego Board of Supervisors directed the Chief Administrative Officer to conduct a comprehensive groundwater study for the Pine Valley area. The area assessed in this study included 29.3 square miles and two basins identified as "Pine North" and "Pine South." This groundwater study included a groundwater availability analysis, which determined that the sustainable yield for Pine South is not sufficient to meet water demand associated with the County's General Plan theoretical build-out, while the sustainable yield for Pine North is sufficient to meet water demands associated with all build-out scenarios. The County's groundwater study concluded that groundwater resources are adequate in both Pine South and Pine North basins to meet the demands under existing conditions and with the addition of additional residences if all discretionary permits currently in process were approved. (San Diego County, 2010)

The private Pine Valley groundwater well proposed for use under the project is approximately 200 feet below ground surface, cored and cased in upper alluvium near the surface and then fractured rock further below. The static water level in this well is approximately 30 feet below ground surface. Water from this well is often used for construction demand for other projects and is not typically sold for human consumption; water quality information is not available for this well. Although specific numbers for water supply for this well are unavailable, based on anecdotal evidence and historical use, the potential water supply available from this well is estimated to be approximately 121 afy. Existing demand from other users of this water supply may vary widely depending on the time of year and active construction projects; however, based on anecdotal evidence of historical water sales from this well owner, the estimated existing demand associated with other users of this well is approximately 28 afy. For purposes of this analysis, this demand is estimated to grow at a steady rate for the next 20 years. (NAA, 2011b)

An assessment of water supply has been prepared for the Pine Valley water source under the proposed OWEF (see discussion in Section 3.20.2.2) and is incorporated by reference throughout Section 4.19 of this EIS/EIR, and included as Appendix P. Table 3.20-3, below, identifies estimated water availability for the Pine Valley water source described above.

Table 3.20-3. Pine Valley Groundwater Well Projected Water Availability (acre-feet annually)

Water Supply / Demand	Year				
	2012	2017	2022	2026	2032
Projected Availability					
FDB Licensed Bottled Water Distributor	0.01	0.01	0.01	0.01	0.01
Private Pine Valley Groundwater Well	121	121	121	121	121
Total Projected Availability	*121.01*	*121.01*	*121.01*	*121.01*	*121.01*
Projected Demands					
Other Users of the Well	28	33	38	43	48
OWEF Construction	50	0	0	0	0
OWEF Fire Suppression	0.03	0	0	0	0
OWEF Toilet Flushing	0.18	0.18	0.18	0.18	0.18
OWEF Drinking Water	0.01	0.01	0.01	0.01	0.01
Total Projected Demand	*78.22*	*33.19*	*33.19*	*43.19*	*48.19*
Difference (Availability minus Demand)	**42.79**	**87.82**	**82.82**	**77.82**	**72.82**

Source: NAA, 2011b.

Table 3.20-3 does not identify water supply availability for the overall Campo-Cottonwood SSA or the Pine Valley as a whole, but rather presents estimates of production capabilities for the private groundwater well that would be used to meet the project's water supply requirements. In addition, ~~D~~due to the well's location within the surface recharge area of a designated Sole Source Aquifer, it is subject to review by the EPA, per Section 1424(e) of the U.S. Safe Drinking Water Act (SDWA).

Dixieland Mine Groundwater

As described above, one potential water source for the project is an existing groundwater supply well located at the Dixieland Mine site and operated by Vulcan Materials Company under a CUP issued by Imperial County (Imperial County, 2005). A groundwater investigation was conducted at the Dixieland Mine site in 2005, prior to installation of the well (EMKO, 2005). This investigation is summarized below and referenced as applicable in Section 4.19.

The Dixieland Mine groundwater well is located more than 12 miles east of the community of Ocotillo, along the eastern border of the Coyote Wells Valley Groundwater Basin (also discussed above; see "Ocotillo-Coyote Wells Sole Source Aquifer"). The eastern portion of the Coyote Wells Valley Groundwater Basin consists primarily of Tertiary marine sediments which typically contain saline water with TDS levels of 1,000 mg/L or greater. Groundwater modeling studies indicate that flow in this basin generally occurs from the northwest to the southeast. The high-TDS saline water within the Tertiary marine sediments (which underlie Quaternary Alluvium) flows both southward and eastward from the Ocotillo area. Groundwater modeling studies have shown that the fresh water in the Quaternary Alluvium in the western part of the Coyote Wells Valley Groundwater Basin does not flow into the eastern portion of the basin. (EMKO, 2005)

The investigation conducted prior to construction of the Dixieland Mine well indicated that geologic units at the site are characterized by sand from zero to three feet bgs, red clay from three to 120 feet bgs, clean gravel from 120 to 200 feet bgs, and red clay from 200 to the total depth of the borehole at 240 feet bgs. A test well at the site measured depth to water at 60 ft bgs; the well was pumped for two hours at a rate of 225 to 235 gpm, after which the water level was again measured at 60 feet bgs. The test well was then pumped at approximately 230 gpm for 24 hours, after which the static water level was measured at 47 feet bgs. Additional pumping indicated that the water level did not decline more than about one foot during pumping. (EMKO, 2005)

The nearest groundwater wells to the Dixieland Mine site are located eight to twelve miles to the west and upgradient from the Dixieland Mine site. The pumping of 200 afy of water from the Dixieland Mine supply well is understood to have little to no effect on upgradient wells. There are no naturally-occurring surface waters in the vicinity of the Dixieland Mine supply well, and man-made surface waters comprised of the Imperial Lakes development and IID's West Side Canal have no measurable interaction with local groundwater due to the presence of more than 100 feet of clay between the ground surface and the gravel aquifer at 120 feet bgs which supplies the Dixieland Mine well. (EMKO, 2005)

The Dixieland Mine supply well produces high-saline groundwater which is not suitable for potable or agricultural uses, without treatment to reduce TDS concentrations.

The existing Dixieland Mine groundwater supply well is capable of producing at least 325 gpm to 350 gpm, with very little drawdown in the surrounding aquifer (EMKO, 2005). This production rate is more than adequate to meet the 200 afy of withdrawal authorized by the CUP (EMKO, 2005). If the Dixieland Mine well is used to provide water for the project, the existing CUP would be amended by Imperial County to allow for use of the water at the proposed OWEF site (Pattern, 2011).

Pages 3.20-21 and 3.20-22

San Diego County

As discussed in Section 3.20.1, the County of San Diego has determined that groundwater pumped from the private Pine Valley well identified as a source for the project can be considered legal nonconforming and therefore subject to Nonconformity Regulations of the San Diego County Zoning Ordinance §6852, and that Existing Groundwater Extraction Operations as described in San Diego County Zoning Ordinance §6864 may occur. These sections of the Zoning Ordinance are presented below.

- **Zoning Ordinance §6852: Right to Continue a Nonconformity.** A nonconformity which is in existence prior to the effective date of the Zoning Ordinance or of any subsequent rezoning or other amendment thereto which creates such use or structure nonconformity, may be continued and maintained, except as otherwise specified in these Nonconformity Regulations. No expansion, extension, substitution or other change in activities and no alteration or other change in facilities is permitted except as expressly required by law or as expressly provided herein. (Renumbered and amended by Ord. No. 5508 (N.S.) adopted 5-16-79. Formerly 6952) (Amended by Ord. No. 10095 (N.S.) adopted 12-8-10)

- **Zoning Ordinance §6864: Existing Groundwater Extraction Operations.** Any existing activity meeting the definition of a "Groundwater Extraction Operation," as determined by the Director, shall be considered a nonconforming use and may continue said operations after May 8, 1992. However, the Nonconformity Regulations commencing at Section 6850 shall apply to such operation. (Added by Ord. No. 8050 (N.S.) adopted 4-8-92)
- **Zoning Ordinance §6870: Modification of Nonconforming Use or Buildings when Nonconformity is Due to Lack of Major Use Permit.** Subparagraph (e), Groundwater Extraction Operation, states that a nonconforming Groundwater Extraction Operation, established as nonconforming pursuant to Section 6864, may be modified, in addition to other modifications that would be allowed by this section, to allow an increase in the amount of water exported or to change the location or method of off-site distribution, provided the findings required by subparagraph (b) can be made, where subparagraph (b) states that modifications may be authorized only after finding that: (1) The use was legally established prior to the requirement for a Major Use Permit; and (2) The requested modification does not constitute a substantial change to the use; and (3) The requested modification will not adversely affect adjacent property or property owners. (4) There is no increase in the size of the parcel. (5) The buildings are located in substantially the same location as shown on the plot plan.

Other relevant Zoning Ordinances include the following:

- **Zoning Ordinance §1810, §6552, and §6654.** The sale of groundwater from a private well owner is a "Groundwater Extraction Operation," requiring a Major Use Permit from the County of San Diego.

In addition to the Zoning Ordinance, San Diego County's General Plan includes an Open Space and Conservation Element, which identifies goals and policies to help guide decision makers on issues concerning water resources in San Diego County, including the Pine Valley area, a potential groundwater source.

- **COS-4.4 Groundwater Contamination.** Require land uses with a high potential to contaminate groundwater to take appropriate measures to protect water supply sources. Potential sources of groundwater contamination include, but are not limited to, landfills, fertilizer, pesticide, manure storage and sales, petroleum product storage tanks, manufacturing plants, and on-site wastewater treatment systems.

Pages 4.29-2 through 4.19-4

Potential water sources for the Proposed Action are described in Section 3.20, and include the following: Pine Valley groundwater; City of Brawley (treated municipal water); Seeley County Water District (treated municipal water); Vulcan Materials (Dixieland Mine groundwater supply well); and the IID West-Side Canal (Colorado River water). Of these potential water sources, two would provide treated municipal water (City of Brawley and Seeley County Water District), one would provide Colorado River water (IID West Side Canal), and two would pump groundwater for the project (Pine Valley and Dixieland Mine). Water supply reliability associated with the City of Brawley source, the Seeley County Water District source, and the IID source is managed through existing plans and policies, which are described in the following bulleted discussion. Groundwater that would be provided by the Vulcan Materials Dixieland Mine would be pumped from a non-adjudicated area (discussed below), but would occur within the constraints of an existing Conditional Use Permit (CUP) which restricts annual groundwater pumpage to 200 afy. Use of the Dixieland Mine source for the proposed OWEF would not alter the quantity of groundwater to be pumped from this well on an annual basis; total uses would continue to be subject to the CUP's constraint of 200 afy and use of this source for the project would therefore represent the persistence of existing conditions relevant to groundwater pumping from this site. In comparison, use of the identified private groundwater well in Pine Valley to meet the project's water requirements would not be subject to an existing maximum usage requirement such as is applicable to the Dixieland Mine well, and use of the Pine Valley source would therefore not represent the persistence of existing conditions. Existing plans and permits applicable to each of the potential water sources for the project are discussed below.

- **City of Brawley - treated municipal water.** The City of Brawley has confirmed in writing to the project Applicant that the city is able to provide 250,000 gallons per day of water for the proposed OWEF, for the period commencing December 2011 through December 2012 (City of Brawley, 2011). Assuming that water would be delivered six days per week to coincide with the proposed construction schedule, this equates to water delivery of 0.767 acre-feet per day, or approximately 250 acre-feet over the proposed year. As described in Section 2.1.3 (see "Water/Wastewater"), approximately 50 acre-feet of water will be needed for construction of the proposed OWEF. The amount of water available from the City of Brawley would be sufficient to meet water supply requirements of the proposed OWEF. In addition, the proposed OWEF may include use of either one temporary pond or up to ten 12,000-gallon temporary water storage tanks (see discussion below under "Surface Water and Drainage Patterns"); water delivered from the City of Brawley supply may be stored in these facilities as needed to meet project requirements.

  Water obtained from the City of Brawley would be treated municipal wastewater; as described in the City's existing UWMP, the water treatment plant has a capacity of treating 16,800 acre-feet per year (afy), with a capability of expanding to 33,600 afy (City of Brawley, 2010). In addition, as described in Section 3.20, any delivery of water by the City of Brawley for use at the proposed OWEF site would occur in compliance with the city's existing UWMP, which assesses current water demands and supplies over a 20-year planning horizon under various drought scenarios (per California Water Code §10612(b)), and provides water supply management direction for the 20-year planning horizon. Use of treated municipal water from the City of Brawley for the proposed OWEF would be consistent with the UWMP, and would not result in adverse impacts to the water supply or to water supply availability.

- **SCWD – treated municipal wastewater.** As with the City of Brawley source described above, the Seeley County Water District water supply would be provided in the form of treated municipal water. As described in Section 3.22, there is no UWMP for this water supply, but the SCWD does implement demand management measures (DDMs) published by the California Urban Water Conservation Council (CUWCC) and supported by DWR, which are typically included as part of an UWMP (IID, 2009). The SCWD's Seeley County Wastewater Treatment Plant (WWTP) has sufficient capacity to meet the water supply requirements of the proposed OWEF. Use of treated municipal water from the SCWD for the proposed OWEF would not result in adverse impacts to the water supply or to water supply availability.
- **Vulcan Materials – Dixieland Mine groundwater supply well.** The Dixieland Mine groundwater supply well is used to pump water for dust control and product washing at the Dixieland Mine site, in accordance with a Conditional Use Permit (CUP) from Imperial County authorizing such uses up to 200 afy per year. If the Dixieland Mine well is used to meet the proposed OWEF water requirements, the CUP would need to be revised by the county to authorize such uses; the quantity of water authorized for consumption is expected to remain 200 afy, which would include any uses for the proposed OWEF as well as ongoing uses at the Dixieland Mine site.

  As described in Section 3.20.1.2 (see "Dixieland Mine Groundwater"), the existing Dixieland Mine groundwater supply well is capable of producing at least 325 gpm to 350 gpm, with very little drawdown in the surrounding aquifer; this production rate is more than adequate to meet the 200 afy of withdrawal authorized by the CUP. The groundwater investigation that was conducted at the Dixieland Mine site prior to installation of the well determined that pumping up to 200 afy of groundwater from this location would not have any impacts on other groundwater wells, on the groundwater basin, or on other water users in the vicinity (EMKO, 2005). The 200 afy of groundwater use authorized under the CUP for the Dixieland Mine site would be sufficient to meet the project's water requirements, and compliance with a revised CUP would avoid potential adverse impacts to the water supply and water supply reliability.

  Groundwater pumped from the Dixieland Mine site is high in TDS concentrations, and would need to be treated prior to use at the OWEF site, particularly for mixing concrete. The Dixieland Mine site is currently equipped with a Reverse Osmosis (RO) system and evaporation ponds; it is anticipated that if this water supply is used for the proposed OWEF, the Dixieland Mine RO system and evaporation ponds would be used to reduce TDS concentrations in the water prior to transporting it (via truck) to the proposed OWEF site.
- **IID – West-Side Canal water.** As described in Section 3.20, water may be purchased from the IID and transported by truck from the IID West-Side Canal. IID has indicated to the project Applicant that approximately 25 afy of canal water may be obtained for the proposed OWEF through the Interim Water Supply Policy for Non-Agricultural Projects (Pattern, 2011). The ID Board of Directors adopted a Strategic Plan in 2008 which included an objective to develop an integrated water resources plan by the end of 2009, adopt recommendations outlined in the plan in the first quarter of 2010, and implement the actions by mid-year 2010 (IID, 2009a). The purpose of the Integrated Water Resources Management

Plan (IID Plan) is to address the changing water needs of the community and provide water for economic development while meeting its agricultural water needs and complying with existing agreements and regulations (IID, 2009a). The Draft Final IID Plan, dated September 21, 2009, describes immediate (2010), near-term (2011 - 2015), mid-term (2016 - 2020), and long-term (2021 - 2047) actions to be implemented over a 37-year planning horizon (IID, 2009b). The IID Plan addresses the entire IID service area, including the Proposed Action site, and includes thorough analysis of future water supply and demand requirements, including increasing water demands associated with projects such as the Proposed Action. The IID Plan is currently in draft form and is not considered an UWMP because it has not yet been adopted and no implementation activities are contained within the IID Plan. If IID West-Side Canal water is used for the proposed OWEF, compliance with the IID's transfer agreement, Interim Water Supply Policy, and pending IID Plan would ensure that no adverse impacts to the water supply or water supply reliability would occur.

As mentioned, Pine Valley groundwater has also be identified as a potential source for the project; however, this source is not subject to maximum groundwater pumping restrictions per an existing plan or permit and therefore use of this source could result in impacts to water supply and reliability that would be avoided by the plans and/or permits associated with other potential water sources. As described in Section 3.20, use of the Pine Valley groundwater source is subject to the Nonconformity Regulations of the San Diego County Zoning Ordinance §6852. Accordingly, if more than 28 afy of water is exported from this well, then a Major Use Permit from the County of San Diego would be required. It is understood that the Major Use Permit would address the use of Pine Valley groundwater on a site that does not overlie the affected groundwater resource; it may also address a maximum quantity of groundwater that may be pumped from the Pine Valley well, but at the time of preparation of this Final EIS/EIR the specifics of the Major Use Permit requirements are not known. Therefore it is assumed that the Pine Valley groundwater source would not be subject to the same pumping restrictions as the Dixieland Mine groundwater source. As a result, the analysis of potential water supply impacts presented in this section is focused on the Pine Valley groundwater source more than other potential sources which, as described above, are managed under existing plans and/or permits.

All potential water sources identified for the OWEF, as discussed above and introduced in Section 3.20 are referenced as applicable throughout the following analysis of potential impacts of the proposed OWEF.

Page 4.19-5

Approximately 50 acre-feet of water would be required over the project's construction period, to be obtained from one or more of the potential water sources described above (Pine Valley; City of Brawley; Seeley County Water District; Vulcan Materials Dixieland Mine groundwater; IID West-Side Canal). Also as described above, with the exception of the Pine Valley source, each potential water source identified for the project is managed per existing plans and/or permits. Use of one or more of these potential sources to meet the project's water supply requirements would not result in substantial adverse effects because such use would occur in compliance with existing plans and/or permits that are implemented to avoid adverse effects and ensure water supply reliability. Therefore, in order to be conservative in assessing potential impacts of OWEF associated with the project's water source, it is assumed that all project water would be obtained from the private groundwater well located in Pine Valley.

~~As mentioned, Pine Valley groundwater has also be identified as a potential source for the project; however, this source is not subject to maximum groundwater pumping restrictions per an existing plan or permit and therefore use of this source could result in impacts to water supply and reliability that would be avoided by the plans and/or permits associated with other potential water sources. As described in Section 3.20, use of the Pine Valley groundwater source is subject to the Nonconformity Regulations of the San Diego County Zoning Ordinance §6852. Accordingly, if more than 28 afy of water is exported from this well, then a Major Use Permit from the County of San Diego would be required. It is understood that the Major Use Permit would address the use of Pine Valley groundwater on a site that does not overlie the affected groundwater resource; it may also address a maximum quantity of groundwater that may be pumped from the Pine Valley well, but at the time of preparation of this Final EIS/EIR the specifics of the Major Use Permit requirements are not known. Therefore it is assumed that the Pine Valley groundwater source would not be subject to the same pumping restrictions as the Dixieland Mine groundwater source. As a result, the analysis of potential water supply impacts presented in this section is focused on the Pine Valley groundwater source more than other potential sources which, as described above, are managed under existing plans and/or permits.~~

~~All potential water sources identified for the OWEF, as discussed above and introduced in Section 3.20 are referenced as applicable throughout the following analysis of potential impacts of the proposed OWEF.~~

Page 4.19-7

~~*Imperial Irrigation District.* A portion of the water required during construction may be purchased from the existing Imperial Irrigation District (IID) system.~~ Section 3.20 of this EIS/EIR describes that the water supply for the Proposed Action may also be purchased from the City of Brawley (treated municipal water), from Seeley County Water District (treated municipal water), from Vulcan Materials (Dixieland Mine groundwater supply well), and/or the IID (West-Side Canal water); these water sources, if secured for the proposed OWEF,~~IID has an Integrated Water Resources Management Plan in place, which addresses the entire IID service area, including the proposed OWEF site, and includes thorough analysis of future water supply and demand requirements, including increasing water demands associated with projects such as the Proposed Action. The IID is responsible for minimizing and mitigating potential environmental effects of its actions and programs; however, due to the active implementation of the Integrated Water Resources Management Plan mentioned above, if the proposed OWEF purchases water from the IID, which is not anticipated to occur, such an agreement~~ would not ~~be expected to~~ result in overdraft or drawdown conditions.

Page 4.19-9

- Campo-Cottonwood SSA. As previously discussed, this analysis of potential water supply impacts focuses on the Pine Valley groundwater source in order to be conservative in characterizing potential impacts, as the other potential sources are managed under existing plans and/or permits to avoid adverse effects. Therefore, for the purposes of this analysis, it is assumed that g~~G~~roundwater from the Pine Valley area would be used to meet construction water requirements and would be obtained from an existing groundwater well, and no excavation activities or permanent infrastructure installation would occur. Use of Pine Valley groundwater is not anticipated to result in encountering shallow groundwater such that dewatering activities would be required, resulting in no impact.

Page 4.19-11

The Imperial County Fire Department will also require that a separate 10,000-gallon water supply at a minimum be provided at the O&M facility for fire suppression. The source of the water for toilets and fire suppression may be the Pine Valley location or one of the alternate locations discussed above; it is anticipated that the same water source(s) would be used for construction, operation and maintenance, and decommissioning of the project.

4.19-15 – 4.19-16

Overdraft and Drawdown. The Coyote Wells Valley Groundwater Basin, which underlies the proposed OWEF site, is currently in a state of long-term groundwater overdraft, or the condition where the quantity of water removed from a groundwater basin exceeds the rate of recharge to the basin over an extended duration. The introduction of any new groundwater pumping activities in this basin would exacerbate existing overdraft conditions. The Vulan Materials Dixieland Mine groundwater supply well, which has been identified as a potential water source for the project, is located on the eastern edge of the Coyote Wells Valley Groundwater Basin, outside of the Ocotillo-Coyote Wells SSA; as previously mentioned with regards to this potential water source, if it is used to meet project water requirements, such used would occur in compliance with an existing CUP which restricts total use from the well at 200 afy. Use of this well for the project's water supply would not alter existing conditions relevant to groundwater use at the site and therefore, if this well is used for the project, such use would not result in an adverse impact to overdraft and drawdown~~. However, as described above, o~~Operation and maintenance of the proposed OWEF would not utilize groundwater resources from within the Ocotillo-Coyote Wells SSA, and would not introduce new uses of Coyote Wells Valley Groundwater Basin water ~~to meet operational water requirements. Rather~~ In order to be conservative for the purposes of this analysis, it is assumed that operational water for the project would be obtained from the ~~same~~ Pine Valley groundwtaer well~~(s) that would be used to meet construction water requirements.~~ source.

Page 4.19-17

Decommissioning of the proposed OWEF would include the removal and disposal of turbine towers, above-ground electrical tower components, and substation components, as well as the removal of all below-ground infrastructure to three feet below the ground surface. The decommissioning activities that are anticipated to require water include dust control for road usage, soil conditioning and dust control during foundation removal and backfill, road restoration, ground re-contouring, and reseeding/revegetation. Decommissioning details such as schedule, total length of road restoration, and extent of re-contouring are unknown at this time; therefore, water demand associated with decommissioning is reasonably estimated as a percentage of construction water requirements. Decommissioning activities would be substantially less water-intensive that construction activities, largely because decommissioning would require no water for concrete mixing. A reasonable and conservative estimate of decommissioning water requirements is considered to be approximately 50 percent of construction water requirements, or not more than 25 acre-feet. It is also reasonably assumed that the same water source used during construction would be used to meet decommissioning requirements.

A decommissioning plan would be developed consistent with the BLM Wind Energy Programmatic EIS and Record of Decision (ROD), and approved by the BLM. The BMPs and stipulations developed for construction activities would be applied to similar activities during the decommissioning phase, including as related to the protection of hydrology and water resources from potentially adverse impacts.

~~No water requirements associated with decommissioning the proposed OWEF have been identified. However, based on the description of decommissioning activities provided in Section 2.1.3.4 of this EIS/EIR, it is reasonably anticipated that a water source would be required for soil conditioning and dust control associated with earth disturbing activities that would occur during decommissioning, including but not limited to the removal of concrete foundations, backfilling of foundation holes, and restoration of natural grade. A water source for decommissioning has not been identified; however, it is also reasonably assumed that the same water source used during construction would be used to meet decommissioning requirements. Therefore, for the purposes of this analysis it is assumed that water for decommissioning would be obtained from a private well in the Pine Valley area of eastern San Diego County, within the surface recharge area of the Campo Cottonwood SSA. Local groundwater resources within the Ocotillo-Coyote Wells SSA would not be used to meet decommissioning water requirements.~~

Page 4.19-18 and 4.19-19

Overdraft and Drawdown. As previously described, the Coyote Wells Valley Groundwater Basin underlies the proposed OWEF site and is currently in a long-term state of overdraft, which occurs when the quantity of water removed from a groundwater basin exceeds the rate of recharge to the basin over an extended duration; the introduction of any new groundwater pumping activities in this basin would exacerbate existing overdraft conditions. ~~As described above, no water requirements have been identified for decommissioning of the proposed OWEF, but it is reasonably assumed that water would be required for soil conditioning and dust control, and that such water would be obtained from a private groundwater well in the Pine Valley area of eastern San Diego County.~~ No new uses of the ~~The~~ Coyote Wells Valley Groundwater Basin would be introduced for the purposes of ~~not be used to meet~~ decommissioning the proposed OWEF; ~~water requirements;~~ therefore, decommissioning of the proposed OWEF would not contribute to ~~have no effect on~~ overdraft and/or drawdown in the Coyote Wells Valley Groundwater Basin. As described ~~under the impact discussion for "Construction," the use of Pine Valley groundwater to meet water requirements would require groundwater monitoring and reporting conducted in coordination with local agencies, in order to avoid and/or minimize potential overdraft and drawdown impacts (mitigation measures are summarized below and presented in detail in Section 4.19.10). The Pine Valley area is located within the surface recharge area of the Campo-Cottonwood SSA and, therefore, use of groundwater from this source is subject to review by the EPA~~ above, it is anticipated that the same water source used during construction of the proposed

OWEF would be used to meet decommissioning water requirements of not more than 25 acre-feet and therefore, in order to be conservative in characterizing impacts of the project it is assumed that the Pine Valley groundwater source would be used for project decommissioning. Depending on other uses of Pine Valley groundwater resources at the time of decommissioning the proposed OWEF, temporary drawdown conditions could result from using this source of water for decommissioning, and such effects would recover following the completion of decommissioning activities.

Page 4.19-19 and 4.19-20

Water Supply Reliability. As described above, ~~no water supply requirements associated with~~ decommissioning of the proposed OWEF would require no more than 25 acre-feet, ~~have been identified; however,~~ and it is reasonably assumed that ~~water would be required for soil conditioning and dust control during decommissioning. It is also assumed that~~ the same water source used during construction would be used during decommissioning. As described in Section 3.20~~.2.2~~, the proposed OWEF does not meet the intent of the definition of "Project" under Senate Bill 610 (SB 610) because the Proposed Action would not be an "industrial plant" with more than 1,000 persons or an "industrial park" planned to house more than 1,000 persons, and the passing of Senate Bill 267 (SB 267) clarified that wind energy projects which require less than 75 afy, such as the proposed OWEF, are not subject to SB 610. ~~; t~~Therefore, a WSA under SB 610 is not required for the proposed OWEF. However, the project Applicant has prepared an assessment of water supplies for the project, which is incorporated by reference throughout the EIS/EIR and included as Appendix P. In addition, since publication of the Draft EIS/EIR, additional potential water supplies have been identified, as described in Section 3.20.1. Sufficient water supply is available to meet the requirements of the proposed OWEF.

Page 4.19-46

As previously discussed, in order to be conservative it is assumed that the project's water supply would be obtained from the Pine Valley groundwater source, within the Campo-Cottonwood SSA. If other potential water source(s) are used to meet the project's water requirements, such use would occur in compliance with existing plans and/or permits to avoid adverse effects. With the exception of the Pine Valley groundwater source, use of the other potential water sources (including the City of Brawley, Seeley County Water District, Vulcan Materials Dixieland Mine groundwater, and/or IID West-Side Canal) would not have potential to contribute to potential cumulative effects because these water sources are managed under existing plans and/or permits to avoid adverse effects (see discussion provided in Section 3.20 and above, in Section 4.19.3). Therefore, this assessment of potential cumulative impacts is focused on the Pine Valley groundwater source, with respect to water supply.

Page 4.19-47

This section discusses past and ongoing projects in the cumulative analysis area described above. A wide variety of past and present development projects contribute to the cumulative conditions for water resources in the cumulative impact analysis area. As mentioned above, the geographic extent of cumulative impact analysis for water resources is defined as the surface recharge area of the Ocotillo-Coyote Wells SSA, where the proposed OWEF site is located; and the surface recharge area of the Campo-Cottonwood SSA, where the project's construction, maintenance, and decommissioning water source is located; as previously described, although other potential water sources have been identified for the project, the Pine Valley groundwater source is the only one considered to have potential to contribute to cumulative effects with respect to water supply and therefore, in order to be conservative in this assessment of cumulative effects, it is assumed that the Pine Valley groundwater source would be used to meet all project water supply requirements. Cumulative conditions for each of these SSAs, as relevant to water resources impacts of the proposed OWEF, are described below.

Page 4.19-47

The Campo-Cottonwood SSA is included in the cumulative scenario because this is where the Pine Valley groundwater source is located; as discussed, in order to be conservative in this assessment of potential cumulative effects, it is assumed that the Pine Valley groundwater source would be used ~~due to the proposed use of a private groundwater well(s) in the Pine Valley area~~ to meet all construction, maintenance, and decommissioning water requirements of the project.

Page 4.19-51 and 4.19-52

Potential water sources for the proposed OWEF are described in Section 3.20, and include the following: Pine Valley groundwater; City of Brawley (treated municipal water); Seeley County Water District (treated municipal water); Vulcan Materials (Dixieland Mine groundwater supply well); and the IID (West-Side Canal water). As described in Section 4.19.3, with the exception of the Pine Valley groundwater source, existing studies and/or plans have demonstrated the availability of water supply from these potential sources to meet water requirements of the proposed OWEF; therefore, the Pine Valley groundwater source is addressed in detail in this analysis.

Cumulative impacts to groundwater supply and recharge during construction of the proposed OWEF or an alternative would occur if other projects drawing groundwater from Pine Valley area resources within the Campo-Cottonwood SSA would contribute to long-term overdraft conditions while the proposed OWEF or an alternative is pumping groundwater for construction requirements, and/or if other projects within the Campo-Cottonwood SSA or the Ocotillo-Coyote Wells SSA introduce substantial new areas of impervious surfaces such that groundwater recharge rates and/or patterns are substantially altered. As described above, construction of the proposed OWEF or an alternative would include implementation of BMPs and mitigation measures identified in Section 4.19.10. Mitigation Measure Water-2 (*Develop a Water Supply Contingency Plan for construction*) and Mitigation Measure Water-3 (*Prepare Groundwater Monitoring and Reporting Plan*) require actions to ensure that construction of the proposed OWEF or an alternative would not result in long-term overdraft conditions associated with construction water requirements, thereby ensuring that the project would not contribute to the cumulative scenario such that cumulative impacts associated with groundwater supply and recharge would occur.

~~As described~~ Based on the analysis of Pine Valley groundwater resources provided in Section 3.20, it is reasonable to assume that the Pine Valley area of the Campo-Cottonwood SSA is not currently affected by long-term overdraft conditions. ~~In addition, although t~~There is potential for the proposed OWEF or an alternative to result in temporary overdraft or drawdown, but such effects would be temporary and would cease in response to the implementation of requirements specified in Mitigation Measure Water-3. With implementation of BMPs and mitigation measures identified in Section 4.19.10 and referenced throughout the analysis provided in this section, the project would not contribute to the cumulative scenario with respect to long-term overdraft and/or drawdown effects. ~~As determined in the impact analyses presented in Sections 4.19.3 through 4.19.8, the proposed OWEF or an alternative would not result in long-term overdraft or drawdown conditions. In addition,~~ If other project(s) within the geographic and temporal scope of analysis pump Pine Valley area groundwater at the same time as the Proposed Action or an alternative, and such pumping results in overdraft conditions (temporary or long-term), such effects would be detected by the groundwater monitoring and reporting activities required per Mitigation Measure Water-3 and groundwater pumping associated with the proposed OWEF would be subsequently ceased until the groundwater resource recovers, which is anticipated to occur in response to precipitation events, per the nature of fractured rock storage and overdraft/drawdown conditions. Therefore, the proposed OWEF or an alternative would not contribute to cumulative impacts associated with groundwater supply and recharge.

Page 4.19-52

Stormwater Drainage Systems

The proposed OWEF and alternatives would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and would therefore not have the potential to result in cumulative impacts associated with existing or planned stormwater drainage systems. Due to the use and storage of harmful or potentially hazardous materials during construction activities, there is potential for construction of the proposed OWEF or an alternative to contribute sources of polluted runoff, such as if an accidental leak or release of harmful materials were to occur during a storm event. As mentioned, the Sunrise Powerlink project passes through the proposed OWEF site; however, construction of the Sunrise Powerlink project is currently ongoing and would not occur at the same time as the proposed OWEF. In addition, the Sunrise Powerlinke project does not include implementation of a stormwater drainage system in the proposed OWEF area. Construction of the Sunrise Powerlink project is anticipated to have similar potential as the proposed OWEF to result in an accidental spill or leak of harmful materials that could have the potential to result in polluted runoff, but because construction of this project would not occur at the same time as construction of the proposed OWEF, there is no potential for a cumulative impact associated with polluted runoff to occur. In addition, ~~; however, such effects~~this potential impact of the proposed OWEF would be site-specific and ~~mitigated~~ would be minimized or avoided by actions listed in Section 4.19.10, and would therefore not have the potential to combine with impacts of other projects in the cumulative scenario, as related to the contribution of polluted runoff.

Page 4.19-53 and 4.19-54

Flood Hazard Areas

Infrastructure constructed under the proposed OWEF or an alternative would be designed and engineered to withstand potential flooding and erosion hazards and, with implementation of BMPs and mitigation measures identified in Section 4.19.10, effects associated with impeding or redirecting flood flows would be minimized and/or avoided. It is anticipated that other projects in the cumulative scenario would also place infrastructure within and/or adjacent to FEMA-designated Flood Hazard Areas. The Sunrise Powerlink project, discussed above, would pass through the proposed OWEF site and place permanent transmission line infrastructure in this area; this infrastructure could result in site-specific flood diversions in the case of a major (100-year) storm event, but such diversions would be isolated to the location of permanent project features (transmission poles), and would not be in close enough proximity to the proposed OWEF WTG towers such that the flow diversions at individual tower sites could combine to result in cumulative effects associated with flood hazards. In addition, ~~however, due to the site-specific nature of potential impacts associated with Flood Hazard Areas and~~ the minimization and/or avoidance of potential Flood Hazard Area impacts that would occur through implementation of the BMPs and mitigation measures identified in Section 4.19.10, would ensure that the project's contribution to the cumulative scenario would be less than significant, and this potential impact of the proposed OWEF or an alternative would not ~~anticipated to~~ combine with similar effects of other projects in the cumulative scenario

Water Quality

Degradation of surface water quality and/or groundwater quality could occur through the effects of erosion and sedimentation, and/or through the accidental release of hazardous materials, particularly if a storm event occurs during construction activities. Other projects in the cumulative scenario would also have the potential to result in water quality impacts associated with erosion and sedimentation and/or the release of hazardous materials. This impact of the proposed OWEF or an alternative would be ~~site-specific in nature and would be~~ minimized and/or avoided through implementation of the BMPs and mitigation measures identified in Section 4.19.10 (as described in preceding sections), and would therefore be site-specific in nature. As described in Sections 4.19.9.2 and 4.19.2.3, and noted in Tables 4.1-1 and 4.1-2, other projects in the cumulative scenario are not adjacent to the proposed OWEF site and would not be under construction at the same time as the proposed OWEF or an alternative. Therefore, this potential impact of the proposed OWEF or an alternative would not have potential to combine with similar effects of other projects in the cumulative scenario.

Mudflow Hazards

Infrastructure that would be installed during construction of the proposed OWEF or an alternative would be designed and engineered to avoid impacts associated with the potential inundation by mudflow, where it is determined based on geotechnical studies that mudflow hazards are present. Although other projects in the cumulative scenario may place infrastructure in areas subject to mudflow hazards, due to the size of the proposed OWEF site and ~~the location-specific nature of this potential impacts, in addition to~~ the minimization of this potential impact through implementation of BMPs and mitigation measures listed in Section 4.19.10, this potential impacts of the project or an alternative would not have potential to combine with similar effects of other projects in the cumulative scenario and potential cumulative effects are not anticipated to occur.

4.19.9.5 Operation and Maintenance

Cumulative impacts associated with operation and maintenance of the proposed OWEF or an alternative are discussed in this section. In order to be conservative in this assessment of cumulative impacts, it is assumed that the operation and maintenance water supply for the proposed OWEF or an alternative would be obtained from the Pine Valley groundwater source; as described above, the other potential water sources for the project are not considered to have potential to result in cumulative effects. ~~as the construction water supply.~~ As such, approximately 0.19 afy would be pumped from ~~this well or wells~~the Pine Valley groundwater source and transported to the project site via truck, where it would be stored in a tank at the O&M facility for use as needed.

Groundwater Supply and Recharge

As discussed in Sections 4.19.3 through 4.19.5, the operational water requirement of the proposed OWEF or an alternative would be approximately 0.19 afy, which is minimal compared to construction water requirements. This quantity is also well within the amount of water that has been historically exported from the proposed Pine Valley groundwater source (28 afy). The groundwater monitoring and reporting requirements specified in *Mitigation Measure Water-3 (Prepare Groundwater Monitoring and Reporting Plan)*, presented below in Section 4.19.10, ensure that the Pine Valley groundwater source would be closely evaluated during construction of the project, when water use would be substantially greater than during operation of the project, and ensure that groundwater usage occurs in close coordination with applicable agencies to ensure that adverse impacts do not occur. During operation of the project, coordination with applicable agencies (including the County of San Diego, for the Pine Valley groundwater source) would continue to occur, and would ensure that the project's operational usage of 0.19 afy would not result in adverse effects associated with groundwater supply and recharge. As discussed above in Section 4.19.9.4, construction of the proposed OWEF or an alternative would not have potential to result in cumulative impacts associated with groundwater supply and recharge. Therefore, the project or an alternative is not anticipated to have the potential to combine with similar impacts of other projects relevant to groundwater supply and recharge such that cumulative effects would occur. The operation and maintenance of the proposed OWEF or an alternative also would not result in cumulative effects associated with groundwater supply and recharge.

Surface Water and Drainage Patterns

Operation and maintenance of the proposed OWEF or an alternative would not introduce new infrastructure or alter existing surface water and drainage patterns beyond what is completed during the construction period. As previously noted, the Sunrise Powerlink project would pass through the OWEF site; however, similar to the proposed OWEF, operation and maintenance of the Sunrise Powerlink project would not introduce new infrastructure beyond what is implemented during the construction period. As discussed in the characterization of construction-related impacts, the presence of transmission towers and WTG towers may result in site-specific drainage pattern alterations, but such effects would be limited to the specific location of each tower. Due to the size of the overall project site and the site-specific nature of potential drainage pattern alterations, there would not be potential for similar effects of other project to combine with these potential effects of the proposed OWEF or an alternative such that cumulative impacts would occur. No cumulative impacts associated with surface water or drainage pattern alterations that could result in erosion, siltation, or flooding on or off site would occur.

Page 4.19-55

Cumulative impacts associated with decommissioning of the proposed OWEF or an alternative are discussed in this section. Water supply requirements associated with decommissioning of the proposed OWEF or an alternative ~~have not been identified~~ are anticipated to be approximately 50 percent of the project's construction water requirements, or not more than 25 acre-feet~~, but~~ , and it is reasonably assumed that ~~a water source would be required for soil conditioning and dust control, and that~~ the same water source used during construction would also be used to ~~meet~~ for decommissioning ~~requirements~~. ~~Therefore, for the purposes of this analysis it is assumed that water for decommissioning would be obtained from a private well(s) in the Pine Valley area of eastern San Diego County, within the surface recharge area of the Campo Cottonwood SSA~~ Potential water sources that may be used to meet the project's water supply requirements are presented in Section 3.20.1. Local groundwater resources within the Ocotillo-Coyote Wells SSA would not be used to meet decommissioning water requirements.

Page 4.19-59

Water-2 **Develop a Water Supply Contingency Plan for construction.** Prior to construction, Applicant shall conduct a groundwater investigation for any groundwater basin(s) potentially affected by construction, operation, and/or decommissioning of the project to determine whether the identified groundwater resource(s) is in overdraft conditions; such investigation may include review of historic groundwater well data, groundwater monitoring, hydrologic modeling, and/or interviews with private well owners. The Applicant shall coordinate groundwater investigation efforts with the applicable RWQCB. No new uses of groundwater resources from overdrafted basins shall be ~~used~~ introduced to meet project needs.

Page 4.19-60

The Plan shall include a schedule for submittal of quarterly monitoring data reports by the Applicant to the BLM. The BLM shall review these quarterly reports with consideration of the following criteria:

- Where water level monitoring has indicated drawdown of five feet or more, the Applicant has immediately reduced groundwater pumping until water levels recover and stabilize or the Applicant has provided compensation to the well owner;
- Sustained drawdown of five feet or more has not occurred at off-site wells; and
- Substantial groundwater quality degradation has not occurred in water drawn from the project's supply well(s) or off-site wells (such as increased TDS concentrations that may result from over-pumping).

Per the criteria listed above, the BLM shall determine whether ~~groundwater wells surrounding the project site and project supply well(s) are affected by project activities in a way that requires~~ additional mitigation is necessary to reduce adverse impacts to groundwater resources and groundwater wells surrounding the project site. Such additional mitigation efforts, as determined

> by the BLM to be appropriate, may include but are not limited to the following: reduced rate of groundwater pumping; use of an alternative water source, or water conservation activities. ~~and, if so, shall determine what measures are needed.~~

The EIS/EIR also demonstrates with reasonable certainty that the potential use of 50 acre-feet of water from the Pine Valley well would not have a significant adverse impact on the Campo-Cottonwood SSA, including through the implementation of mitigation measures required if adverse impacts to water supplies were identified.

Several commenters have asked whether the groundwater basins within the Campo-Cottonwood SSA are depicted on a figure, and whether the private groundwater well proposed for use under the project is depicted on a figure. The individual groundwater basins of the Campo-Cottonwood SSA are not specified on a figure. The area of analysis for the project includes the entire surface recharge areas of the Ocotillo-Coyote Wells SSA and the Campo-Cottonwood SSA, as shown on Figures 3.20-4 and 3.20-5. Detailed information on all groundwater basins within the aforementioned SSAs is provided in Section 3.20 of the EIS/EIR. The location of the private groundwater well is also not identified on a figure, to protect the privacy of the private well owner.

Sole Source Aquifers

The proposed OWEF is located within the surface recharge area of the Ocotillo-Coyote Wells Sole Source Aquifer (SSA), and the construction water source identified near Pine Valley is located within the surface recharge area of the Campo-Cottonwood SSA (see Figures 3.20-4 and 3.20-5). Local groundwater resources in the Ocotillo-Coyote Wells SSA would not be pumped by the Applicant for use in construction, operation, or decommissioning of the proposed OWEF.

A sole source aquifer is an area of groundwater resources defined by the U.S. Environmental Protection Agency (EPA) as an aquifer which supplies more than 50 percent of a community's drinking water. Any project which receives a federal grant or loan guarantee and which has the potential to contaminate a sole source aquifer, as determined by the EPA, should be modified to reduce or eliminate the risk. As described below in Section 3.20.2.1, Section 1424(e) of the U.S. Safe Drinking Water Act (SDWA) authorizes the EPA to evaluate projects located within a designated SSA, if the project is financially assisted by federal grants or federal loan guarantees. The proposed OWEF is subject to EPA review to determine whether the project should be modified to reduce or eliminate potential risk of contamination to the Ocotillo-Coyote Wells SSA but no such determination is required with regard to the Campo-Cottonwood SSA as no project activities will take place within watershed of the aquifer. On September 27, 2011, Jamelya Curtis with the Ground Water Office of the EPA, Region IX confirmed that, based on her review of the EIS/EIR, the proposed OWEF will not adversely affect the Ocotillo-Coyote Wells SSA. The Final EIS/EIR has been revised to reflect EPA's determination, as shown below.

> Pages 3.20-5 and 3.20-6
>
> The proposed OWEF is subject to EPA review to determine whether the project should be modified to reduce or eliminate potential risk of contamination to a designated SSA. Since publication of the Draft EIS/EIR for the proposed OWEF, the EPA has determined that the project would not adversely affect the Ocotillo-Coyote Wells sole source aquifer (EPA, 2011b).

Other revisions included on pages 3.20-11 through 3.20-13 of the Final EIS/EIR and presented above discuss a potential water source located at the existing Dixieland Mine, east of the proposed OWEF site, which pumps groundwater from along the border of the Coyote Wells Valley Groundwater Basin; if this source is used to meet project water requirements, such use would occur in compliance with a CUP issued by Imperial County. As stated above, the project Applicant would not pump local groundwater resources in the Ocotillo-Coyote Wells SSA.

Water Supply Assessment – SB 610 and SB 267

Several commenters requested a copy of the Water Supply Assessment (WSA) prepared by the Applicant. The Applicant-prepared study has been incorporated by reference into the Final EIS/EIR, as shown in the revisions to pages 3.20-11 through 3.20-13 which are presented above, and included as Appendix P. Also as described above, the study does not identify water supply availability for the overall Campo-Cottonwood SSA or the Pine Valley as a whole, but rather presents estimates of production capabilities for the private groundwater well that would be used to meet the project's water supply requirements. However, also as described above, the EIS/EIR demonstrates with reasonable certainty that the potential use of 50 acre-feet of water from the Pine Valley well would not have a significant adverse impact on the Campo-Cottonwood SSA.

Commenters also expressed concern that the requirements of Senate Bill 610 (SB 610) concerning the preparation of water supply assessment under California Water Code §10910 had not been meet. As stated on page 3.20-16 of the Final EIS/EIR, based on the definition of "project" included in SB 610, the proposed OWEF does not meet the intent of the definition and a WSA is not considered necessary for the project. However, the Final EIS/EIR has also been revised to clarify that the Applicant has prepared an assessment of the Pine Valley water source, which is incorporated by reference throughout the Final EIS/EIR. In addition, since publication of the Draft EIS/EIR, Water Code §10910 has been amended by Senate Bill 267 (SB 267), which clarifies that certain types of renewable energy developments which require less than 75 acre-feet per year of water do not require a WSA. Revisions relevant to SB 610 and SB 267 are shown below.

Pages 3.20-16 and 3.20-17

> Based on the definition of "project" as presented above, the proposed OWEF does not meet the intent of the definition. While the Proposed Action would be an industrial facility, it would not be an "industrial plant" with more than 1,000 persons or an "industrial park" planned to house more than 1,000 persons. Imperial County, as the CEQA Lead Agency for the Proposed Action, has determined that the Proposed Action does not meet the definition of "Project" per SB 610. This decision is not an authoritative interpretation of the types of projects that should be required per SB 610; other Lead Agencies may choose to make different decisions on similar projects, with regards to the applicability of SB 610. Regardless, the project Applicant has prepared an analysis of water supply for the proposed OWEF; this analysis, which is included as Appendix P to the Final EIS/EIR, was prepared in an effort to thoroughly assess the viability of the proposed Pine Valley water source to meet project water requirements.
>
> 3. Is there a public water system that will service the proposed project?
>
> Water supply source(s) for the proposed OWEF are described above, in the introduction to Section 3.20.10 and in Section 3.20.1.2. As discussed above, ~~W~~water ~~service during~~ supply for

construction and operation of the Proposed Action would be ~~obtained from a private well in Pine Valley, west of the proposed OWEF site, and/or provided by the Imperial Irrigation District (IID). Neither of these potential sources is a public water system.~~ purchased from one of the following sources: a private groundwater well in Pine Valley in San Diego County; the City of Brawley (treated municipal wastewater); Vulcan Materials (Dixieland Mine groundwater); and/or the IID West Side Canal water. United States Code Title 42 Section 300f(4) describes that the term "public water system" refers to a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty five individuals (42 U.S.C. Sec. 300f(4)). ~~The IID describes that its facilities constitute neither a system for the provision of "piped water" nor a system for the provision of water "for human consumption", and that the IID is not a public water system (IID, 1993; IID, 2008). Therefore, for the purposes of SB 610, the requirement to prepare a WSA (determined not to be necessary for this Proposed Action) would be the responsibility of either the treated water supplier (not applicable to this Proposed Action) or Imperial County. Even though IID is not a public water system, as the regional wholesale water supplier it requests to be involved in a consultation role during the preparation of any SB 610 required WSA (IID, 2008).~~ None of these potential sources is a public water system.

- The Pine Valley water source is an existing private groundwater supply well.
- The City of Brawley maintains a public water system, but water that would be purchased from the City for the proposed OWEF would be treated municipal wastewater (not for human consumption) and would not be delivered to the project site using public water system infrastructure.
- The Vulcan Materials water source is an existing private groundwater supply well.
- The IID describes that its facilities constitute neither a system for the provision of "piped water" nor a system for the provision of water "for human consumption", and that the IID is not a public water system (IID, 1993; IID, 2008). Even though IID is not a public water system, as the regional wholesale water supplier it requests to be involved in a consultation role during the preparation of any SB 610-required WSA (IID, 2008).

For the purposes of SB 610, the requirement to prepare a WSA would be the responsibility of either the treated water supplier or Imperial County. As described above, the project Applicant has prepared an assessment of water supplies for the proposed OWEF in order to fully assess the viability of the proposed Pine Valley water source to meet project requirements.

4. Is there a current UWMP that accounts for the project demand?

~~No, t~~There is no Urban Water Management Plan (UWMP) for the unincorporated portion of Imperial County where the Proposed Action is located. There is also no UWMP for the Pine Valley area of San Diego County, the Vulcan Materials source at Dixieland Mine, or the IID West-Side Canal source. The City of Brawley has a current UWMP in place, as discussed above in Section 3.20.1. ~~However, the IID Board of Directors adopted a Strategic Plan in 2008 which included an objective to develop an integrated water resources plan by the end of 2009, adopt recommendations outlined in the plan in the first quarter of 2010, and implement the actions by mid year 2010 (IID, 2009a). The purpose of the Integrated Water Resources~~

~~Management Plan (IID Plan) is to address the changing water needs of the community and provide water for economic development while meeting its agricultural water needs and complying with existing agreements and regulations (IID, 2009a). The Draft Final IID Plan, dated September 21, 2009, describes immediate (2010), near-term (2011 – 2015), mid-term (2016 – 2020), and long-term (2021 – 2047) actions to be implemented over a 37-year planning horizon (IID, 2009b). The IID Plan addresses the entire IID service area, including the Proposed Action site, and includes thorough analysis of future water supply and demand requirements, including increasing water demands associated with projects such as the Proposed Action. Therefore, as relevant to SB 610, the IID Plan is considered equivalent to an UWMP.~~

5. Is groundwater a component of the supplies for the project?

Yes, water supply requirements for the Proposed Action or an alternative would be met using water pumped from a private groundwater well near Pine Valley in eastern San Diego County and trucked to the Proposed Action site in eastern Imperial County. ~~Over the 36-month~~ During the construction period, approximately 50 acre-feet of water would be required for concrete manufacturing, dust suppression, and road maintenance. In addition, the Operations and Maintenance (O&M) building would require approximately 126 gallons per day, or 0.14 afy for human consumption. The expected operational lifetime of the Proposed Action is approximately 20 to 40 years, depending on possible improvements to wind turbine designs. Therefore, total demand for the O&M building would be between approximately 20.14 and 40.28 acre-feet over the operational lifetime of the Proposed Action. Groundwater may also be a source for the proposed OWEF if the Vulcan Materials Dixieland Mine supply well is used for the project; as described above, use of the Dixieland Mine well would occur in accordance with a revised CUP issued by Imperial County.

As described above, the proposed Ocotillo Wind Facility is not considered a “project” as defined under SB 610, and a ~~full Water Supply Assessment~~ WSA is not required. The project Applicant has prepared an assessment of water supplies for the project, which is incorporated by reference throughout this EIS/EIR and included as Appendix P. The assessment prepared by the project Applicant is specific to the Pine Valley groundwater source; as described in Section 4.19.3.1, for the other potential water sources (the City of Brawley source, the Dixieland Mine source, and the IID source), existing studies and/or plans have demonstrated the availability of water supply to meet water requirements of the proposed OWEF. Potential impacts to water supply are addressed under ~~Impact WR-1 (Substantially deplete local groundwater supplies or interfere with groundwater recharge)~~ the “Groundwater Supply and Recharge” sub-headings presented under each alternative in Section 4.19 of this EIS/EIR.

Senate Bill 267. SB 267 was signed into law by California’s Governor Brown on October 8, 2011, amending California’s Water Law to revise the definition of “project” specified in SB 610, as discussed above. Under SB 267, wind and photovoltaic projects which consume less than 75 afy of water are not considered to be a “project” under SB 610; subsequently, a WSA would not be required for this type of project. SB 267 does not state that renewable energy projects which use more than 75 afy are subject to SB 610 and must prepare a WSA; rather, it clarifies that those renewable projects which use less than 75 afy are not subject to such requirements. As noted above, the proposed OWEF would require 50 acre-feet of water for construction, which is less than the 75 afy specified by SB 267. Therefore, the proposed OWEF is not considered a "project" as defined under SB 267, and a WSA is not required. Also as noted above, the project Applicant has prepared an assessment of water supplies for the project, which is incorporated by reference throughout the EIS/EIR and included as Appendix P.

Pages 4.19-8 and 4.19-9

Water Supply Reliability. In addition to the BMPs and mitigation measures designed to minimize and/or avoid potential effects to groundwater supply and recharge described above, this water resources analysis also addresses water supply reliability. Section 3.20~~.2.2~~ of this EIS/EIR provides a discussion of Senate Bill 610 (SB 610), which requires detailed analysis of water supply availability for certain types of large development projects. SB 610 requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA and meets certain requirements. In accordance with SB 610, a WSA should assess water supply availability to meet the water requirements of the project, with consideration to other reasonably foreseeable water demands that would affect the identified source, over a period of twenty years and under varying climatic conditions. As described in Section 3.20~~.2.2~~, the proposed OWEF does not meet the intent of the definition of "project" under SB 610 and does not meet the 75 afy threshold specified by SB 267. ~~because the Proposed Action would not be an "industrial plant" with more than 1,000 persons or an "industrial park" planned to house more than 1,000 persons.~~ Therefore, a WSA under SB 610 or SB 267 is not required. Also as noted in Section 3.20, the project Applicant has prepared an assessment of water supplies for the project, which is incorporated by reference throughout the EIS/EIR and included as Appendix P.

The assessment of water supplies prepared for the proposed OWEF indicates that the private groundwater well in Pine Valley identified as a water source for the Proposed Action has sufficient capacity and availability to meet water requirements of the project.

Page 4.19-14

At the time of preparation of this Final EIS/EIR, ~~a commercial water supplier~~ an operational water supply has not been identified; however, it is assumed that the operational water source(s) would be the same as the construction water source(s) described in Section 3.22 and assessed above.~~However, due to a limited availability of commercial water suppliers in the proposed OWEF area, it is reasonably assumed that the IID would provide operational water unless such water would be obtained from the groundwater well(s) in Pine Valley. As described in Section 3.20.2.2, the IID's Integrated Water Resources Management Plan addresses the proposed OWEF area and includes thorough analysis of future water supply and demand requirements, including increasing water demands associated with projects such as the Proposed Action; if operational water is obtained through IID, the implementation of the aforementioned plan would minimize or avoid potential environmental impacts associated with the provision of such water, and would mitigate for potential effects if necessary. Therefore, in order to be conservative towards the purpose of characterizing all potential impacts of the proposed OWEF, it is assumed that the 0.19 afy of water required during operation would be obtained from the same private Pine Valley well(s) in eastern San Diego County that would be used during construction. Operational water would be trucked approximately 50 miles to the project site and stored in a water storage tank at the O&M facility.~~

Common Response 11: Anza Borrego Desert State Park / Juan Bautista de Anza National Historic Trail

Many commenters expressed concern with regard to potential impacts of the proposed OWEF on Anza-Borrego Desert State Park (ABDSP). The EIS/EIR states that the project would cause permanent adverse visual impacts on views from various surrounding observation points, including some locations within ABDSP. As discussed in the EIS/EIR, while the project would have significant adverse visual impacts from observation points in the general vicinity of the project site, the visibility and prominence of the project at background distances is limited. The project contrast would be due primarily to color and texture contrast. Visual effects could be experienced by users of special designated areas at far distances, but the greatest visual impacts would be experienced by users within relatively close proximity.

Eight Key Observation Points (KOPs) were established in the vicinity of the proposed project and alternatives, including two KOPs within ABDSP (KOP 5 at Mortero Palms Access and an elevated perspective at KOP 6 on Red Hill). These KOPs (and accompanying simulations) are considered representative of the views of the project site from surrounding locations, including the locations mentioned in comments. The elevated viewpoint on Red Hill provides a reasonable representation of the elevated perspectives available from other surrounding elevated locations. All of the KOP analyses concluded that the proposed project (or alternative) would substantially degrade the existing visual character or quality of the site and its surrounding landscape and of views of that landscape from surrounding areas that have views of the project site, including ABDSP.

Comments were also received regarding the Piedras Grandes Cultural Preserve, a preserve located within ABDSP. As noted above, the project would have adverse visual impacts on portions of ABDSP, including the Piedras Grandes Cultural Preserve. The eastern boundary of the Piedras Grandes Cultural Preserve is located two miles west of the project area. Piedras Grandes contains the Horse and Rider Pictograph within a rock shelter, an area of dense concentration of human cremations, and numerous other sites. Given the distance from the project area to the Preserve, there will be no direct physical impacts on cultural resource sites within the Preserve associated with the project, and it is unlikely the proposed OWEF would have significant indirect impacts on the context of the cultural resources within the preserve. As explained in Section 3.4 and 4.4, the BLM recognizes the tribal importance of the area in general and acknowledges that the Tribes have identified the area including and surrounding the project site as a TCP. Please see Common Response 13 on Traditional Cultural Properties, Cultural Landscapes, and Districts.

Finally, comments were also received expressing concern that the project might affect the Juan Bautista de Anza National Historic Trail (Anza Trail). As shown on Figure 3.13-1 of the Draft EIS/EIR, the Trail is not located in close proximity to the project site. At its closest point, the Anza Trail is approximately 4 miles from the boundary of the project site. The Anza Trail passes directly under and adjacent to both the Southwest Powerlink 500-kV transmission line and the recently constructed Sunrise Powerlink 500-kV transmission line. The Anza Trail has been added to Table 3.13-1 (Regional Recreation and Open Areas) in Section 3.13 (Recreation), and Section 4.16 (Special Designations) has been cross-referenced in Sections 3.13 and 4.12.

Impacts on recreational resources are described in Section 4.12 (Recreation) of the EIS/EIR and impacts on visual resources are described in Section 4.18 (Visual Resources). Neither analysis found the project to have any significant impact on the Anza Trail. Because the project site is located several miles away from the trail, impacts would consist of changes to relatively distant landscape views caused by the visibility of wind turbines along segments of the trail where views are not blocked by intervening terrain. For this reasons, visual changes would be limited, resulting in a relatively minor impact on the viewshed of the Anza Trail. However, the BLM acknowledges the importance of the Anza Trail and agrees that reasonable efforts should be made to minimize impacts on the trail. As a result, Mitigation Measure Rec-1 has been added to the Final EIS/EIR, which proposes the preparation of a Comprehensive Interpretive Plan for the Anza Trail through coordination between the BLM, National Park Service, and the Applicant.

Common Response 12: Section 106 Government-to-Government Consultation

Several commenters expressed concern regarding whether the BLM has engaged in meaningful Section 106 consultation with Native American tribes to identify, evaluate and resolve project-related adverse effects to historic properties (i.e., properties already included in the National Register of Historic Places (National Register) or that meet the eligibility criteria for the National Register).

Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations codified in "Protection of Historic Properties" (36 CFR Part 800) require federal agencies to take into account the effects of a proposed undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. Having determined that the proposed OWEF project constitutes an "undertaking" as defined in 36 CFR § 800.16(y) and involves the type of activity that could affect historic properties (36 CFR § 800.3(a)), the BLM, as lead federal agency for the project, has the statutory responsibility for compliance with provisions of Section 106 of the NHPA (36 CFR Part 800.2(a)(2)). 36 CFR § 800.1(a) states the purpose and goal of the Section 106 process as follows:

The section 106 Process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

At the heart of the Section 106 process is the concept of "consultation". Consultation is broadly defined as "the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process." 36 CFR 800.16(f). This definition of consultation is consistent with Section 106's overarching purpose to identify and evaluate historic properties potentially affected by an undertaking, in order to seek ways to resolve any adverse effects on such properties.

As described in 36 CFR Part 800.2(a)(4), consultation shall be initiated by the agency official, and who "should plan consultations appropriate to the scale of the undertaking and the scope of Federal involvement." Given the array of federal undertakings that can be proposed and the diverse types of historic properties that might be affected by such actions, the nature and scope of consultation necessarily varies on a project-by-project basis, as the process needs to take into account the level of impact, the project scope, and the complexity of issues involved. *See, e.g.,* 36 CFR 800.3(c)(3) (noting that the agency should consult "in a manner appropriate for the undertaking ... and its effects on historic properties"). The regulations do not prescribe a specific procedure that federal agencies are to use to initiate consultation, specify how it is to be conducted (e.g., one meeting for each report, etc), nor do they require that particular reports or analyses be provided in order to initiate or continue consultation. The regulations and applicable guidance and policies of both the Bureau of Land Management (BLM) and the Department simply direct the BLM to initiate consultation "early in the planning process … [in order to] provide Indian tribes a meaningful opportunity to participate in the consultation process." Sec. Order No. 3317, Department of the Interior Policy on Consultation with Indian tribes (Dec. 1, 2011); 36 C.F.R. § 800.2(c)(2)(ii)(A) (requiring that Indian tribes be afforded "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects. It is the responsibility of the agency official to make a reasonable and good faith effort to identify Indian tribes…that shall be consulted in the Section 106 process. Consultation should commence early in the planning process, in order to identify and discuss relevant preservation issues and resolve concerns about the confidentiality of information on historic properties.").

The BLM has complied with these requirements of Section 106 to date, and will continue to do so until the consultation process is complete. Activities that the BLM has taken during the Section 106 consultation process include: sending correspondence requesting input from consulting parties, including tribes; conducting meetings with consulting parties, including group and individual government-to-government meetings for the purposes of information and idea exchange; providing cultural resource site visits on its own initiative and as requested by consulting parties; responding to information requests from consulting parties; and encouraging Tribal participation during the archaeological survey completed for the OWEF. Table 5-1 summarizes some of the significant events in the Section 106 process to date that demonstrate the BLM's good faith efforts to engage in consultation throughout the Section 106 process, including correspondence, Section 106 consulting parties meetings, and document-sharing throughout the various phases of Section 106 (i.e. initiation of Section 106 consultation, identification of historic properties, evaluation and assessment of effects to historic properties, and resolution of adverse effects to historic properties). In addition to the Section 106 consulting parties meetings identified in Table 5-1, numerous individual government-to-government meetings took place between the BLM and individual tribes engaged in the Section 106 process. While the Section 106 consulting party group meetings provide a forum for presenting project updates, presenting the results of cultural resources studies, and open discussion and sharing of ideas about information and concerns with the proposed undertaking, the individual government-to-government meetings with Indian tribes provide a forum for tribes to share information and concerns in an individual context, apart from other consulting parties. The names of tribes and dates of these individual meetings is in Tables 5.2, 5.3, and 5.4. Further description of the information and concerns brought to light through the group and individual meetings is discussed below and also provided in Section 5.2.2 and 5.2.3 of the Final EIS/EIR. The BLM has compiled documentation throughout the Section 106 process that evidences its efforts to afford consulting parties, including Indian tribes, a reasonable opportunity to engage in each phase of the process including identification, evaluation, effects determination, and the resolution of adverse effects.

Throughout the Section 106 process, the BLM has carefully considered the information and concerns of the consulting parties and Indian tribes, and it has incorporated the same into the decision-making process concerning historic properties and adverse effects to them, as well as the analysis of cultural resources for

NEPA purposes. From early on in the Section 106 process, the BLM has responded to the feedback received from the various tribes concerning the traditional cultural and religious significance ascribed to the area. For example, the BLM encouraged the project Applicant to re-design the project to avoid archaeological sites. This request resulted in the complete avoidance of physical effects to all archaeological resources identified during the archaeological survey. Tribes also indicated the important relationship between sites, such as the Spoke Wheel Geoglyph and Signal and Coyote Mountains. In response, a revised project configuration was proposed and is under consideration that removes 43 turbines from the project footprint to avoid obstruction of the main viewsheds from the site (the Refined Project). The BLM has identified the Refined Project as its preferred alternative. Additionally, some Tribes have shared information with respect to the sacred, religious and cultural significance associated with cremations; in response, turbines have been removed from areas in close proximity to known cremations.

Through the consultation process, the BLM has also learned that some Tribes identify an area, which includes the project area, as a Traditional Cultural Property (TCP). Based on the information received to date, the BLM acknowledges the cultural and religious importance of the identified TCP and that the portion of the TCP within the project area is eligible under Criterion A of the National Register for its traditional and cultural significance to Tribes. However, the information provided to date about the characteristics of this TCP only allows us to assume the eligibility of certain portions of the identified TCP for the National Register of Historic Places (36 CFR 800.4(c)(1)) pursuant to 36 CFR § 800.4. Additional information is required to assess and understand the reminder of the TCP including its boundaries, its characteristics and use and potential contributing properties. The BLM is currently working with the consulting parties, including Indian tribes, to finalize a Section 106 Agreement document that will serve to resolve project-related adverse effects to the Spoke Wheel Geoglyph and to those portions of the TCP where sufficient information exists to determine effects should the project be approved. The BLM has also revised the Final EIS/EIR to address potential impacts to that portion of the TCP and to discuss concerns expressed by Tribes about the TCP.

Common Response 13: Traditional Cultural Properties, Cultural Landscapes, and Districts

The BLM responds here to the varied comments that have been made which contend that the proposed project area comprises, or is a part of, a Traditional Cultural Property (TCP), a cultural landscape, and/or a district. This Common Response summarizes the definitions of these types of properties and addresses comments as to whether such a TCP, cultural landscape, or district exists within the proposed project area, their extent, and how the BLM proposes to treat them for purposes of its consideration of the proposed project.

Traditional Cultural Properties

Commenters representing some of the Tribes have proposed that a TCP exists within the project area and the surrounding region; that this area comprises a landscape which is historically, culturally, religiously and spiritually important to the commenting Tribes and to its members; and that the TCP is eligible for listing in the National Register of Historic Places (National Register).

In response to those comments, and as a result of the ongoing Section 106 consultation process with the Tribes, the ACHP, SHPO, and other consulting parties, the BLM acknowledges that the Tribes have identified an area that includes the project area, as a TCP. The BLM recognizes and understands that this identified TCP is of significant cultural and religious importance to a number of Tribes that have submitted comments on the Draft EIR/EIS for the proposed project.

A TCP may be eligible for listing in the National Register based on its "association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (US Department of the Interior, National Park Service Cultural Resources, National Register Bulletin 38, *Guidelines for Evaluating and Documenting Traditional Properties*, page 1).

The first step in determining whether a TCP is eligible for inclusion in the National Register is to ensure that it is a tangible property. The second step in determining eligibility for the National Register is to assess "the integrity of the relationship between a property and the beliefs or practices that may give it significance" (Bulletin 38, page 9). In addition, the condition of the property must be such that the relevant relationships between a property and the beliefs or practices that give it significance survive (Bulletin 38, page 10).

After determining whether it is a tangible property, a TCP must, like all other potential historic properties, be evaluated against the four National Register criteria for eligibility:

(a) Association with events that have made a significant contribution to the broad patterns of our history;
(b) Association with the lives of persons significant in our past;
(c) Embodiment of the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) History of yielding, or potential to yield, information important in prehistory or history.

Based on this guidance, for the purposes of the NEPA/NHPA process for this project, the BLM is assuming that the part of the TCP that is within the project's area of potential effects (APE) is eligible for the National Register; that it has cultural and religious value to the Tribes; and that the part of the TCP that is within the proposed project's APE will be adversely affected by the project should any of the project alternatives be approved. The BLM has selected this approach because it has not been provided enough information to date about the full extent of the TCP boundaries as currently mapped by the Viejas and other Tribes to apply any of the preceding criteria and to ultimately make a determination of the eligibility of the larger area for the National Register. The BLM is consulting with the Tribes, the ACHP, SHPO and other consulting parties to reduce and resolve project-related adverse effects to the TCP, to be documented in a Memorandum of Agreement developed to resolve the adverse effects identified for the project or alternatives.

Cultural Landscape

Several commenters assert that there exists a cultural landscape within the project area. Specifically, the Viejas Tribal Council and other Tribes contend that the project area is a part of a larger cultural landscape and TCP, which exists in the eastern part of San Diego County and western part of Imperial County (Comment EC6-c).

A Cultural Landscape has been defined as "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values" (U.S. Department of the Interior, National Park Service, 1996, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes,* page 4). The same document states "there are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes" (page 4). An ethnographic landscape is then identified as "a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, sacred religious sites, and massive geological structures. Small plant communities, animals, subsistence and ceremonial grounds are often components" (page 4).

The BLM acknowledges that resources identified through cultural resource investigations within the area of potential effects and through consultation with Tribes may indicate the potential for there to exist an ethnographic cultural landscape in and around the project site. As noted above, the BLM has only received general information about the significance of the identified landscape. Further, and more detailed, information about its components and boundaries is necessary in order to define and understand it properly in order to apply the applicable guidelines, even though the BLM generally recognizes the religious and cultural value that the Tribes attribute to the cultural landscape they have identified. The BLM continues to seek such information from the Tribes.

Districts

Several commenters assert that the archaeological resources recorded within the project area should be considered together as a district. Districts are significant concentrations, linkages, or continuities of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. Districts derive their importance from being unified entities based on the interrelationships of various individual resources. Examples of districts include business districts, canal or irrigation systems, estates and farms, industrial complexes, rural villages, transportation networks, residential areas, rural historic districts, and groups of habitation sites. According to the US Department of the Interior, National Park Service Cultural Resources, National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, a district "must be a definable geographic area that can be distinguished from surrounding properties by changes such as density, scale, type, age, style of sites, buildings, structures, and objects or by documented differences in patterns of historic development or associations."

Although the Archaeological Survey Report (ASR) prepared for the project did not positively identify the archaeological resources recorded in the project area as constituting or contributing to one or more districts based on available information, the BLM acknowledges that further research may reveal the potential for a district or multiple districts to exist within the project area. Further research may also reveal that some of the archaeological resources within the project area may be part of a larger previously identified district, such as the In-Ko-Pah Gorge Discontiguous District; the Yuha Basin Discontiguous District, or a larger yet-to-be identified district, whose boundaries may extend outside of the project area. There is also a potential for the additions to the multiple property listing of the Earth Figures of the California-Arizona Colorado River Basin Thematic Group.

The County has determined that the BLM's assumptions about the existence of a TCP and its eligibility for the NRHP do not require that the County treat it as a historical resource for purposes of the CEQA analysis in this joint document. (As used here, "historical resource" encompasses "archaeological resource" pursuant to CEQA Guidelines Section 15064.5.) CEQA confirms the County's discretion to make a separate CEQA determination under the criteria set forth in the CEQA statute and Guidelines. The County has determined that the project site is not a historic resource under CEQA, and the following is a summary of the basis for the County's determination. The assumed TCP is not listed on the CRHR , and has not been determined by the State Historical Resources Commission to be eligible for such listing, so the site is not a mandatory historical resource under CEQA Guideline 15064.5(a)(1). The assumed TCP also has not formally been determined to be eligible for the National Register, although BLM is assuming such eligibility for the purposes of its NEPA analysis. The site is not included in a local register of historical resources, so the site is not a presumed historic resource under CEQA Guidelines 15064.5(a)(2). The project site also is not a site that is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, so the site is not a discretionary historic resource under CEQA Guideline 15064.5(a)(3).

In making the determination whether the assumed TCP is a historic resource, the County has reviewed the information relating to whether the site has traditional, religious, and cultural significance as well as other information. For purposes of the CEQA analysis, the County as lead agency has determined that substantial record evidence supports a determination that the site is not a historical resource under the definition set forth in CEQA Guideline 15064.5(a)(3). The Tribes have not provided sufficient of tribal or ethnographic information about the use of this project site (historic or otherwise); in light of the paucity of information, the BLM has made a conservative assumption of eligibility as a TCP. In the County's view, the paucity of information supports a finding that the site is not a historic resource. The claim that there is a significant cultural association with the project site has only arisen in the last several years. Some such use may be in response to the proposed project. In addition, the use and status of the site may be compared to that of the Spoke Wheel Geoglyph, a significant historic resource in the project vicinity. Therefore, based on the County's review of the record, the County is making its discretionary determination as CEQA lead agency that the assumed TCP is not a historical resource for CEQA purposes.

5.5.5 Individual Responses

Please see Appendix N for responses to all comments submitted on the Draft EIS/EIR.

5.6 Administrative Remedies

The BLM and the EPA's Office of Federal Activities will publish separate Notice of Availability's (NOAs) for the PA & Final EIS/EIR in the *Federal Register* when the document is ready to be released to the public. The NOA (to be published by the EPA in the *Federal Register*) will initiate a 30-day protest period on the Proposed PA to the Director of the BLM in accordance with 43 CFR 1610.5-2.

Following resolution of any protests, the BLM may publish an Approved PA and a ROD on the Project Application. Publication and release of the ROD would serve as public notice of BLM's decision on the Project Application which is appealable in accordance with 43 CFR Part 4.

5.7 List of Preparers

Though individuals have primary responsibility for preparing sections of the Proposed PA & EIS/EIR, the document is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation. Specialists at the BLM's Field Office, State Office, and Washington Office review the analysis and supply information, as well as provide document preparation oversight. Contributions by individual preparers may be subject to revision by other BLM specialists and by management during internal review.

Table 5-7. List of Preparers

Name	Job Title	Primary Responsibility
BLM – El Centro Field Office		
Gaddis, Nicollee	Planning and Environmental Coordinator	NEPA Compliance
Johnson, John	Environmental Protection Specialist	NEPA Compliance
Ludwig, Noel	Hydrologist	Water Resources
Meeks, Dallas	Lead Outdoor Recreation Planner	Recreation
Tyson, Sharon	Wildlife Biologist	Wildlife Resources
Simmons, Carrie	Archaeologist, Paleontological Resources	Cultural Resources, Paleontological Resources
Steward, Daniel	Resource Branch Chief	El Centro Field Office
Trouette, Andrew	Natural Resource Specialist	Wilderness
Whyte, Jennifer	Realty Specialist	Lands and Realty
Zale, Tom	Associate Field Manager	NEPA Compliance
BLM – California Desert District Office		
Childers, Jeff	Planning and Environmental Coordinator	NEPA Compliance, Socioeconomics, Environmental Justice
Goodro, Margaret	Field Manager	Editing and Review
Marsden, Kim	Environmental Scientist	Vegetation Resources, Wildlife Resources
Perry, Cedric	Project Manager	Editing and Review
BLM – California State Office		
Campbell, Vicky	T&E Species Biologist	Policy & Environmental Compliance
Conrad-Saydah, Ashley	Project Manager	Climate Change
Dreyfuss, Erin	Planning and Environmental Coordinator	Editing and Review
Lund, Christina	State Lead Botanist	Vegetation Resources
McGinnis, Sandra	Environmental Protection Specialist	Policy & Environmental Compliance
Stein, Karl	Natural Resource Specialist	Soils Resources
County of Imperial		
Havens, Angelina	Planner II	Editing and Review
Aspen Environmental Group		
Bagwell, Beth	Cultural Resources Specialist	Cultural Resources
Blewitt, Lisa	Noise Specialist	Noise, Alternatives, Cumulative Projects
Davidson, Jon	Vice President	Project Manager
Hampton, George	Senior Associate	Editing and Review
Hawkins, Jacob	Environmental Planner	Social and Economic Issues, Environmental Justice
Huerta, Susanne	Environmental Planner	Introduction, Lands and Realty, Multiple Use Classes, Recreation
Hwang, Insun	Engineer	Air Resources, Climate Change, Cumulative Projects
Kozhevnikov, Anton	Senior GIS Specialist	Geographic Information Systems
Long, Matthew	Environmental Planner	Soil Resources, Mineral Resources, Geographic Information Systems
Mescher, Aubrey	Environmental Planner	Soil Resources, Mineral Resources, Water Resources, Cumulative Projects
Meyer, Christopher	Senior Associate	Cultural Resources, Paleontological Resources

Table 5-7. List of Preparers

Name	Job Title	Primary Responsibility
Mitchell, Marissa	Environmental Scientist	Wildland Fire Ecology, Public Health & Safety, Alternatives
Noorzay, Akbar	GIS Specialist	Geographic Information Systems
Ramaker, Shruti	Environmental Planner	Transportation and Public Access, Public Health and Safety
Simpson, Kati	Senior Graphic Design Specialist	Computer Graphics
Spicer, Judy	Document Coordinator	Document Production
Vahidi, Negar	Senior Associate	Editing and Review
Walters, Will	Senior Engineer	Air Resources, Climate Change
Yeh, Stanley	Environmental Scientist	Introduction, Proposed Action, Livestock Grazing, Public Health & Safety, Wild Horses and Burros, Special Designations
Helix Environmental Planning		
Cacciatore, Seekey	Project Manager	Vegetation/Wildlife Resources
Howard, Shelby	Biology Group Manager	Vegetation/Wildlife Resources
Leonard, Debbie	Senior Scientist	Vegetation/Wildlife Resources
Venz, Elizabeth	Senior GIS Specialist	GIS support, Vegetation/Wildlife Resources
Wojtalewicz, Aleksandra	Technical Editor	Vegetation Resources, Wildlife Resources
Linscott, Law & Greenspan Engineers		
Prasad, Narasimha	Senior Transportation Engineer	Transportation and Public Access
Michael Clayton Associates		
Clayton, Michael	Visual Resource Specialist	Visual Resources
Paleo Solutions		
Aron, Geraldine L.	Principal Investigator	Paleontological Resources
Deering, Mark R.	GIS Specialist/Field Crew Technician	Paleontological Resources
Kelly, Jennifer	Assistant Project Manager/Research Assistant	Paleontological Resources
Tierra Environmental Services		
Baksh, Ph.D., Michael	President	Cultural Resources

6. ACRONYMS AND ABBREVIATIONS

µg/m$_3$	micrograms per cubic meter
°F	degrees Fahrenheit
A	ampere (amp)
AAQS	ambient air quality standards
AB	Assembly Bill
AB 32	California Global Warming Solutions Act of 2006
ABDSP	Anza-Borrego Desert State Park
ac	acres
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACOE	United States Army Corps of Engineers
ADT	Average Daily Traffic
AERMOD	AMS/EPA Regulatory Model
af or ac-ft	acre-feet
afy or ac-ft/yr	acre-feet per year
AIChE	American Institute of Chemical Engineers
AIM	Aeronautical Information Manual
ALUC	Airport Land Use Commission
AM	Amplitude Modulated
AML	appropriate management level
AML	abandoned mined lands
AMPs	Allotment Management Plans
AMS	American Meteorological Society
amsl	above mean sea level
AMT	alternative minimum tax
ANSI	American National Standards Institute
AO	Authorized Officer
APCD	Air Pollution Control District

APCO	Air Pollution Control Officer
APE	Area of Potential Effect
API	American Petroleum Institute
APLIC	Avian Power Line Interaction Committee
APN	Assessor's Parcel Number
APP	Avian Protection Plan
Applicant	Ocotillo Express LLC
AQCMM	Air Quality Construction Mitigation Manager
AQCMP	Air Quality Construction Mitigation Plan
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ARMR	Archaeological Resource Management Report
ARPA	Archaeological Resources Protection Act of 1979
ASME	American Society for Material Engineering
AST	aboveground storage tank
ASTM	American Society for Testing Materials Standards
ATC	Authority to Construct
ATCC	Area of Traditional Cultural Concern
ATCM	Airborne Toxic Control Measure
ATV	all-terrain vehicle
AWEA	American Wind Energy Association
BA	Biological Assessment
BACM	Best Available Control Measures
BACT	Best Available Control Technology
BCC	birds or conservation concern
bgs	below ground surface
bhp	brake-horsepower
BIL	basic impulse level
BIS	Department of Business Innovation & Skills
BLM	United States Bureau of Land Management

BMPs	best management practices
BO	Biological Opinion
BOR	Bureau of Reclamation
BRMIMP	Biological Resources Mitigation Implementation and Monitoring Plan
CAA	Clean Air Act
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
CalARP	California Accidental Release Program
CalEPA	California Environmental Protection Agency
Cal-IPC	California Invasive Plant Council
Cal-OSHA	California Occupational Safety and Health Administration
CalPIF	California Partners in Flight
Caltrans	California State Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CAS	Chemical Abstracts Service
CATEF II	California Air Toxics Emission Factors
CBC	California Building Code
CBO	Conference of Building Officials
CBOC	California Burrowing Owl Consortium
CBSC	California Building Standards Code
CC	City Council
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCS	cryptocrystalline silicate
CCTV	closed circuit television
CDCA	California Desert Conservation Area
CDCA Plan	California Desert Conservation Area Plan
CDD	California Desert District
CDE	California Department of Education
CDF	California Department of Forestry and Fire Protection
CDFA	California Department of Food and Agriculture

CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDPA	California Desert Protection Act of 1994
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFATS	Chemical Facility Anti-Terrorism Standard
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIWMA	California Integrated Waste Management Act of 1989
CIWMB	California Integrated Waste Management Board
CMUP	Comprehensive Management and Use Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO2	carbon dioxide
col	colonies
CPUC	California Public Utilities Commission
CRAM	California Rapid Assessment Method
CRHR	California Register of Historical Resources
CRM	Cultural Resources Monitor
CRR	Cultural Resources Report
CRS	Congressional Research Service
CSC	California Species of Special Concern

CSP	California State Parks
CTG	Combustion Turbine Generator
CTTM	Comprehensive Travel and Transportation Management
CUPA	Certified Unified Program Authority
CWA	Clean Water Act
cy	cubic yards
D	dynamic volt amp reactive
dB	Decibel
dBA	A-weighted decibels
DCS	data (or distributed) control system
DDT	Dichloro-diphenyl-trichloroethane
DESCP	Drainage, Erosion, and Sedimentation Control Plan
DHS	Department of Homeland Security
DMG	Division of Mines and Geology (now called California Geological Survey)
DNA	Determination of NEPA Adequacy
DOC	California Department of Conservation
DOE	United States Department of Energy
DOI	United States Department of Interior
DOJ	United States Department of Justice
DOT	Department of Transportation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DPR	Department of Pesticide Regulation
DPR 523	Department of Parks and Recreation cultural resources inventory form
DPS	Distinct Population Segment
DRECP	California Desert Renewable Energy Conservation Plan
DTC	Desert Training Center
DTRO	Desert Tortoise Recovery Office
DTSC	Department of Toxic Substances Control
DWMA	Desert Wildlife Management Area
DWR	California Department of Water Resources

EB	eastbound
EEMP	Equipment Emissions Mitigation Plan
EERE	Energy Efficiency and Renewable Energy
EFD	El Centro Fire Department
EFZ	Earthquake Fault Zone
EIC	Eastern Information Center
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Field
EMS	Emergency Medical Services
EO	Executive Order
EPA	United States Environmental Protection Agency
EPAct 05	Energy Policy Act of 2005
EPRI	Electric Power Research Institute
EPS	Emission Performance Standard
ERC	Emission Reduction Credit
ESA	Endangered Species Act (within the context of Biological Resources)
ESA	Environmentally Sensitive Area (within the context of Cultural Resources)
ET	evapotranspiration
FAA	Federal Aviation Administration
FAR	Fire-affected rock
FCC	Federal Communications Commission
FDOC	Final Determination of Compliance
FE	Federally listed as endangered
FEIR	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHWA or FHA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act

FM	Frequency Modulated
FMAP	Fire Management Activity Plan
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
fps	feet per second
FR	Federal Register
FSC	Field Supervisor Controller
ft	feet
ft2/d	feet squared per day
FT	Federally listed as threatened
FTA	Federal Transit Administration
FTE	full time equivalent
FTHL	flat-tailed horned lizard
g	gravity
gal	gallon
GCC	Global Climate Change
GEA	Geothermal Energy Association
gen-tie	power transmission line
GHG	greenhouse gas
GIS	geographic information system
gpd	gallons per day
gpd/ft	gallons per day per foot
gpd/ft2	gallons per day per square foot
gpm	gallons per minute
GWh	gigawatt-hour
GWR	groundwater recharge
H2S	hydrogen sulfide
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
HAP	Hazardous Air Pollutant

HARP	Hotspots Analysis Reporting Program
HA	Herd Area
HCE	heat collection element
HCM	Highway Capacity Manual
HDPE	high-density polyethylene
HEC-RAS	Hydrologic Engineering Center River Analysis System
HFCs	hydrofluorocarbons
HI	Hazards Index or Chronic Hazards Index
HMA	Herd Management Area
HMBP	Hazardous Materials Business Plan
hp	horsepower
HPTP	Historic Properties Treatment Plan
HRA	Health Risk Assessment
HRMP	Historic Resources Management Plan
HRP	Habitat Restoration Plan
HSC	Health and Safety Code
HUC	hydrologic unit code
HWSRMRA	Hazardous Waste Source Reduction and Management Review Act of 1989
Hz	Hertz
I-8	Interstate-8
ICAPCD	Imperial County Air Pollution Control District
ICC	Interagency Coordinating Committee
ICDTSC	Imperial County Department of Toxic Substances Control
IEEE	Institute of Electrical and Electronics Engineers
IID	Imperial Irrigation District
ILPP	Injury and Illness Prevention Program
in	inches
in/sec	inches per second
IND	Industrial Service Supply
INT	international
IP	intermediate pressure

ISCST	Industrial Source Complex Short Term
ISO	Independent System Operator
ITC	investment tax credit
IUSD	Imperial Unified School District
IVEDC	Imperial Valley Economic Development Corporation
IVRM	Interim Visual Resource Management
K	erosion factor
kA	kilo-amps
KOP	key observation point
kV	kilovolt
kVA	kilovolt-amperes
kVAR	kilovolt-ampere reactive
kW	kilowatt
kWe	kilowatt-electric
L90	The A-weighted noise level that is exceeded 90 percent of the time during the measurement period.
lbs	pounds
lb/yr	pounds per year
Ldn	day-night average noise level
LDS	leachate detection system
LE	Land Evaluation
LEDPA	Least Environmentally Damaging Practicable Alternative
Leq	equivalent continuous sound level
LESA	Land Evaluation and Site Assessment
LESA	Land Evaluation and Site Assessment Model
LID	Low Impact Development
LLC	Limited Liability Corporation
LOS	level of service
LP	low pressure
LRA	Local Reliability Area
LTU	Land Treatment Unit
LTVA	Long-Term Visitor Area

LUP	Land Use Plan
M6.0	earthquake of magnitude 6.0 or greater
Ma	million years ago
MA	management area
MACT	Maximum Available Control Technology
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MCL	Maximum Contaminant Level
MCR	Monthly Compliance Report
MEIR	maximum exposed individual resident
MEIW	maximum exposed individual worker
mg/L	milligrams per liter
mg/m3	milligrams per cubic meter
MgCl	magnesium chloride
mi	miles
ml	milliliters
ML	Measuring Location
MLD	Most Likely Descendent
mm	millimeters
MM	Modified Mercalli
MMBtu	1 million british thermal units
MOU	Memorandum of Understanding
mph	miles per hour
MPP	Mirror Positioning Plan
MRZ	Mineral Resource Zone
MSA	Metropolitan Statistical Area
msl	mean sea level
MT	metric ton
MTBF	mean time between failure
MTCO2e	metric tons of carbon dioxide equivalent
MTPs	Master Title Plats

MTS	Metropolitan Transit System
MUC	Multiple-Use Class
MUC C	Multiple-Use Class Controlled
MUC I	Multiple-Use Class Intensive
MUC L	Multiple-Use Class Limited
MUC M	Multiple-Use Class Moderate
MUC U	Multiple-Use Class Unclassified
MUN	Municipal and Domestic Water Supply
MVA	megavolt-amperes
MVAR	megavolt-ampere reactive
MW	megawatts
Mw	Maximum Earthquake Magnitude
MWh	megawatt-hour
N/A	Not Applicable
N2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NECO	Northern and Eastern Colorado Desert Coordinated Management Plan
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NFP	National Fire Plan
NFPA	National Fire Protection Association
NFWF	National Fish and Wildlife Foundation
NHPA	National Historic Preservation Act
NIOSH	National Institute of Safety and Health
NLCS	National Landscape Conservation System
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

NO	nitric oxide
NO2	nitrogen dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NOX	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	United States National Park Service
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRDC	Natural Resources Defense Council
NTP	Notice to Proceed
NWIS	National Water Information System
O&M	operations and maintenance
O2	oxygen
O3	ozone
OCA	Off-site Consequence Analysis
OCWGB	Ocotillo/Coyote Wells Groundwater Basin
OEHHA	Office of Environmental Health Hazard Assessment
OEWP	Ocotillo Express Wind Project (former project name)
OFA	Offer of Financial Assistance
OHP	California Office of Historic Preservation
OHV	off-highway vehicle
OII	Order Initiating an Informational
OLM	Ozone Limiting Method
OSHA	United States Occupational Safety and Health Administration
OWEF	Ocotillo Wind Energy Facility
PA	Programmatic Agreement
PA	Plan Amendment
PALS	pre-acquisition liability survey
PBS	Peninsular bighorn sheep
PCA	Pest Control Advisor

PCU	power conversion unit
PDF	Portable Document Format
PEIS	Programmatic Environmental Impact Statement
PFCs	perfluorocarbons
PGA	peak ground acceleration
PL	Public Law
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
PMI	Point of Maximum Impact
POD	Plan of Development
PPA	Power Purchase Agreement
PPE	Personal Protective Equipment
ppm	parts per million
ppmv	parts per million by volume
ppmvd	parts per million by volume, dry
PQAD	Prehistoric Quarries Archaelogical District
PRC	Public Resources Code
PRIA	Public Rangelands Improvement Act of 1978
PRM	Paleontological Resource Monitors
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
PRPA	Paleontologic Resources Preservation Act
PRS	Paleontological Resources Supervisor
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
PTNCL	Prehistoric Trails Network Cultural Landscape
PTO	Permit to Operate
PTZ	pan, tilt, and zoom
PV	photovoltaic
PVC	polyvinyl chloride
PYFC	Potential Fossil Yield Classification

QFER	Quarterly Fuel and Energy Report
R	Rare
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RCRA	Resource Conservation and Recovery Act
REAT	Renewable Energy Action Team
REC I	Water Contact Recreation
REC II	Non-contact Water Recreation
Recovery Act	American Recovery and Reinvestment Act of 2009, P.L. 111-5
REC	Recognized Environmental Conditions
REF	Renewable Electricity Future
REL	Reference Exposure Level
RETI	Renewable Energy Transmission Initiative
RFI	radio frequency interference
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
RO	reverse osmosis
ROD	Record of Decision
ROG	reactive organic gases
ROW	right-of-way
ROWD	Report of Waste Discharge
RPS	Renewables Portfolio Standard
RQ	reportable quantity
RTP	Regional Transportation Plan
RUSLE2	Revised Universal Soil Loss Equation
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
S	Sensitive
SAC	Science Advisory Committee
SAP	Sampling and Analysis Plan
SARA	Title III Superfund Amendments and Reauthorization Act of 1986

SC	sediment control
SCADA	supervisory control and data acquisition
SCAG	Southern California Association of Governments
SCCWRP	Southern California Coastal Water Research Project
SCEC	Southern California Earthquake Center
scf	standard cubic feet
scfh	standard cubic feet of hydrogen per hour
SCG	Southern California Gas Company
SCPBRG	Santa Cruz Predatory Bird Research Group
SCWD	Seeley County Water District
SDAR	San Diego and Arizona Railroad
SDG&E	San Diego Gas and Electric Company
SE	State listed as endangered
sf	square feet
SF6	sulfur hexafluoride
SFP	State fully protected
SHPO	State Historic Preservation Officer
SIC	Southeastern Information Center
SIP	State Implementation Plan
SLF	Sacred Lands File
SLRU	Sensitivity Level Rating Units
SO2	sulfur dioxide
SO4	sulfate
SOP	standard operating procedure
SOX	sulfur oxides
SPCC	Spill Prevention Control and Countermeasures
SPL	Sunrise Powerlink 500-kV Transmission Line
SPRR	Southern Pacific Railroad
sq mi	square miles
SQRU	Scenic Quality Rating Unit
SR-98	State Route 98

SRA	Safety Risk Assessment
SRA	State Responsibility Area
SRP	Scientific Review Panel
SS	soil stabilization
SSAB	Salton Sea Air Basin
ST	State listed as threatened
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
T-BACT	Best Available Control Technology for Toxics
TC	tracking control
TDS	Total Dissolved Solids
TGA	Taylor Grazing Act
TMDL	Total Maximum Daily Load
TNW	traditional navigable water
Tpy	tons per year
UBC	Uniform Building Code
UDI	undocumented immigrants
µg/L	micrograms per Liter
µg/m3	micrograms per cubic meter
US	United States
USBR	United States Bureau of Reclamation
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USLE	Universal Soil Loss Equation

UXO	unexploded ordnance
UV	ultraviolet
V	volts
VAC	volts alternating current
VAR	volt-ampere reactive
VdB	velocity decibel
VDE	Visible Dust Emission
VMT	vehicle miles traveled
VOC	volatile organic compound
VRI	Visual Resource Inventory
VRM	Visual Resource Management
W	watts
WA	Wilderness Areas
WAPA	Western Area Power Administration
WB	westbound
WDR	Waste Discharge Requirement
WE	wind erosion
WEAP	Worker Environmental Awareness Program
WEC	World Energy Council
WECC	Western Electricity Coordinating Council
WECO	Western Colorado Desert Routes of Travel Designations
WEPS	Wind Erosion Prediction System
WHMA	Wildlife Habitat Management Area
WIU	Wilderness Inventory Unit
WL	Watch List
WRCC	Western Regional Climate Center
WSA	Wilderness Study Area
WSAC	Wet Surface Air Cooler
WSS	Web Soil Survey
WTE	Wave & Tidal Energy
WTG	Wind Turbine Generator

ybp	years before present
YDMP	Yuha Desert Management Plan
yr	year
ZOI	zone of influence

7. GLOSSARY

A

Adjacent: Defined by ASTM E1527-00 as any real property the border of which is contiguous or partially contiguous with that of the Site or would be contiguous or partially contiguous with that of the Site but for a street, road, or other public thoroughfare separating them.

Air Basin: A regional area defined for state air quality management purposes based on considerations that include topographic features that influence meteorology and pollutant transport patterns, and political jurisdiction boundaries that influence the design and implementation of air quality management programs.

Air Quality Control Region: A regional area defined for federal air quality management purposes based on considerations that include topographic features that influence meteorology and pollutant transport patterns, and political jurisdiction boundaries that influence the design and implementation of air quality management programs.

Alluvium: a fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.

Alluvial Fan: Fan shaped material of water deposited sediments.

Ambient Air Quality Standards: A combination of air pollutant concentrations, exposure durations, and exposure frequencies that are established as thresholds above which adverse impacts to public health and welfare may be expected. Ambient air quality standards are set on a national level by the U.S. Environmental Protection Agency. Ambient air quality standards are set on a state level by public health or environmental protection agencies as authorized by state law.

Ambient Air: Outdoor air in locations accessible to the general public.

Archaeological district: A significant concentration, linkage, or continuity of sites, buildings, or features important in history or prehistory. There can be discontiguous districts composed of resources that are not in close proximity to one another

Area of Critical Environmental Concern (ACEC): A designated area on public lands where special management attention is required: (1) to protect and prevent irreparable damage to fish and wildlife; (2) to protect important historic, cultural, or scenic values, or other natural systems or processes; or (3) to protect life and safety from natural hazards.

Attainment Area: An area that has air quality as good as or better than a national or state ambient air quality standard. A single geographic area may be an attainment area for one pollutant and a non-attainment area for others.

B

Basic Elements: The four design elements (form, line, color, and texture), which determine how the character of a landscape is perceived.

Bioremediation: The use of biological agents, such as bacteria or plants, to remove or neutralize contaminants, as in polluted soil or water.

C

Calcareous Substrates: Substances, often cemented and of a chalky appearance, containing calcium carbonate.

Cancer: A class of diseases characterized by uncontrolled growth of somatic cells. Cancers are typically caused by one of three mechanisms: chemically induced mutations or other changes to cellular DNA; radiation induced damage to cellular chromosomes; or viral infections that introduce new DNA into cells.

Carbon Monoxide (CO): A colorless, odorless gas that is toxic because it reduces the oxygen-carrying capacity of the blood.

Characteristic: A distinguishing trait, feature, or quality.

Characteristic Landscape: The established landscape within an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Climate: A statistical description of daily, seasonal, or annual weather conditions based on recent or long-term weather data. Climate descriptions typically emphasize average, maximum, and minimum conditions for temperature, precipitation, humidity, wind, cloud cover, and sunlight intensity patterns; statistics on the frequency and intensity of tornado, hurricane, or other severe storm events may also be included.

Community Noise Equivalent Level (CNEL): A 24-hour average noise level rating with a 5 dB penalty factor applied to evening noise levels and a 10 dB penalty factor applied to nighttime noise levels. The CNEL value is very similar to the Day-Night Average Sound Level (Ldn) value, but includes an additional weighting factor for noise during evening hours.

Contrast: Opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Contrast Rating: A method of analyzing the potential visual impacts of proposed management activities.

Cretaceous: In geologic history the third and final period of the Mesozoic era, from 144 million to 65 million years ago, during which extensive marine chalk beds formed.

Criteria Pollutant: An air pollutant for which there is a national ambient air quality standard (carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, inhalable particulate matter, fine particulate matter, or airborne lead particles).

Critical Habitat: Habitat designated by the U.S. Fish and Wildlife Service under Section 4 of the Endangered Species Act and under the following criteria: 1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and that may require special management of protection; or 2) specific areas outside the geographical area by the species at the time it is listed but that are considered essential to the conservation of the species.

Cryptocrystalline silicate: Cryptocrystalline silicates are rocks such as flint, chert, chalcedony, or jasper that contain a high percentage of silica (SiO^2), the primary compound that composes quartz.

Cultural Modification: Any man-caused change in the land form, water form, vegetation, or the addition of a structure which creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

Cultural Resource: A location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological and historical sites, structures, buildings, objects, artifacts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains or areas where significant human events occurred, even though evidence of the events no longer remains. And they may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups.

Cultural Resource Data: Cultural resource information embodied in material remains such as artifacts, features, organic materials, and other remnants of past activities. An important aspect of data is context, a concept that refers to the relationships among these types of materials and the situations in which they are found.

Cultural Resource Data Recovery: The professional application of scientific techniques of controlled observation, collection, excavation, and/or removal of physical remains, including analysis, interpretation, explanation, and preservation of recovered remains and associated records in an appropriate curatorial facility used as a means of protection. Data recovery may sometimes employ professional collection of such data as oral histories, genealogies, folklore, and related information to portray the social significance of the affected resources. Such data recovery is sometimes used as a measure to mitigate the adverse impacts of a ground-disturbing project or activity.

Cultural Resource Integrity: The condition of a cultural property, its capacity to yield scientific data, and its ability to convey its historical significance. Integrity may reflect the authenticity of a property's historic identity, evidenced by the survival or physical characteristics that existed during its historic or prehistoric period, or its expression of the aesthetic or historic sense of a particular period of time.

Cultural Resource Inventory (Survey): A descriptive listing and documentation, including photographs and maps of cultural resources. Included in an inventory are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and on-the-ground surveys of varying intensity.

Cultural Resource Values: The irreplaceable qualities that are embodied in cultural resources, such as scientific information about prehistory and history, cultural significance to Native Americans and other groups, and the potential to enhance public education and enjoyment of the Nation's rich cultural heritage.

Cultural Site: A physical location of past human activities or events, more commonly referred to as an archaeological site or a historic property. Such sites vary greatly in size and range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

D

Day/Night Average Sound Level (Ldn): A 24-hour average noise level rating with a 10 dB penalty factor applied to nighttime noise levels. The Ldn value is very similar to the CNEL value, but does not include any weighting factor for noise during evening hours.

Decibel (dB): A generic term for measurement units based on the logarithm of the ratio between a measured value and a reference value. Decibel scales are most commonly associated with acoustics (using air pressure fluctuation data); but decibel scales sometimes are used for ground-borne vibrations or various electronic signal measurements.

Desert Pavement: A surface covering developed over time, of closely packed rock fragments of pebble or cobble size found on desert soils.

Distance Zones: A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground-middleground, background, and seldom seen.

Drought condition: A hydrologic condition during a defined period when rainfall and runoff are much less than average.

E

Enhancement: A management action designed to improve visual quality.

Equivalent Average Sound Pressure Level (Leq): The decibel level of a constant noise source that would have the same total acoustical energy over the same time interval as the actual time-varying noise condition being measured or estimated. Leq values must be associated with an explicit or implicit averaging time in order to have practical meaning.

Excavation: The scientific examination of an archaeological site through layer-by-layer removal and study of the contents within prescribed surface units, e.g. square meters.

F

Fluvial: Of, relating to, or occurring in a river.

Form: The mass or shape of an object or objects which appear unified, such as a vegetative opening in a forest, a cliff formation, or a water tank.

G

Geomorphic Province: Naturally defined geologic regions that display a distinct landscape or landform.

Greenhouse Gas: A gaseous compound that absorbs infrared radiation and re-radiates a portion of hat back toward the earth's surface, thus trapping heat and warming the earth's atmosphere.

Groundwater Overdraft: The condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years during which water supply conditions approximate average conditions.

H

Habitat: A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Hazardous Air Pollutant (HAP): Air pollutants which have been specifically designated by relevant federal or state authorities as being hazardous to human health. Most HAP compounds are designated due to concerns related to: carcinogenic, mutagenic, or teratogenic properties; severe acute toxic effects; or ionizing radiation released during radioactive decay processes.

Hertz (Hz): A standard unit for describing acoustical frequencies measured as the number of air pressure fluctuation cycles per second. For most people, the audible range of acoustical frequencies is from 20 Hz to 20,000 Hz.

Historical Site: A location that was used or occupied after the arrival of Europeans in North America (ca. A.D. 1492). Such sites may consist of physical remains at archaeological sites or areas where significant human events occurred, even though evidence of the events no longer remains. They may have been used by people of either European or Native American descent.

Historical Resource: A cultural resource, for the purpose of CEQA, listed in, or determined to be eligible for listing in, the California Register of Historical Resources (PRC § 21084.1). Subsumed in present analysis under "important historic and cultural aspects of our national heritage."

Historical Property: A cultural resource, for the purpose of Section 106, included in, or eligible for inclusion in the National Register of Historic Places (36 CFR § 800.16(l)(1). Subsumed in present analysis under "important historic and cultural aspects of our national heritage."

Holocene: Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.

Hydrocarbons: Any organic compound containing primarily carbon and hydrogen, such as the alkanes, alkenes, alkynes, terpenes, and arenes.

I

Igneous: Rock, such as granite and basalt that has solidified from a molten or partially molten state.

Indian Tribe: Any American Indian group in the United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

Indigenous: Being of native origin (such as indigenous peoples or indigenous cultural features).

Interdisciplinary Team: A group of individuals with different training, representing the physical sciences, social sciences, and environmental design arts, assembled to solve a problem or perform a task. The members of the team proceed to a solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions.

Invasive Species: An exotic species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13122, 2/3/99).

Isolate: Non-linear, isolated archaeological features without associated artifacts.

K

Key Observation Point (KOP): One or a series of points on a travel route or at a use area or a potential use area, where the view of a management activity would be most revealing.

L

Landscape Character: The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color, and texture. These factors give the area a distinctive quality which distinguishes it from its immediate surroundings.

Landscape Features: The land and water form, vegetation, and structures which compose the characteristic landscape.

Leasable Minerals: Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands potash, phosphate, sodium, and geothermal steam.

Line: The path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types, or individual trees and branches.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

M

Maintenance Area: An area that currently meets federal ambient air quality standards but which was previously designated as a nonattainment area. Federal agency actions occurring in a maintenance area are still subject to Clean Air Act conformity review requirements.

Management Activity: A surface disturbing activity undertaken on the landscape for the purpose of harvesting, traversing, transporting, protecting, changing, replenishing, or otherwise using resources.

Memorandum of Understanding (MOU): A written but noncontractual agreement between two or more agencies or other parties to take a certain course of action.

Meteorological Tower (MET). Instrument located at the proposed Project site, designed to measure temperature, humidity, relative humidity, solar radiation, and wind speed and direction.

Mineral Material Disposal: The sale of sand, gravel, decorative rock, or other materials defined in 43 CFR 3600.

Mining Claim: A mining claim is a selected parcel of Federal Land, valuable for a specific mineral deposit or deposits, for which a right of possession has been asserted under the General Mining Law. This right is restricted to the development and extraction of a mineral deposit. The rights granted by a mining claim protect against a challenge by the United States and other claimants only after the discovery of a valuable mineral deposit. The two types of mining claims are lode and placer. In addition, mill sites and tunnel sites may be located to provide support facilities for lode and placer mining.

Mitigation: Mitigation includes: (a) Avoiding the impacts altogether by not taking an action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, (e) Compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

N

National Pollutant Discharge Elimination System (NPDES): The NPDES permit program has been delegated in California to the State Water Resources Control Board. These sections of the Clean Water Act require that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a State certification that the discharge complies with other provisions of the Clean Water Act.

National Register District: A group of significant archaeological, historical, or architectural sites, within a defined geographic area, that is listed on the National Register of Historic Places. See National Register of Historic Places.

National Register of Historic Places: The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e. districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. Also see National Historic Preservation Act.

National Scenic Trail: One of the three categories of national trails defined in the National Trails System Act of 1968 that can only be established by act of Congress and are administered by federal agencies, although part or all of their land base may be owned and managed by others. National Scenic Trails are existing regional and local trails recognized by either the Secretary of Agriculture or the Secretary of the Interior upon application.

Native American: Indigenous peoples of the western hemisphere.

Nitric Oxide (NO): A colorless toxic gas formed primarily by combustion processes that oxidize atmospheric nitrogen gas or nitrogen compounds found in the fuel. NO is a precursor of ozone, nitrogen dioxide, numerous types of photochemically-generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere over a period that may range from several hours to a few days.

Nitrogen Dioxide (NO2): A toxic reddish gas formed by oxidation of nitric oxide. Nitrogen dioxide is a strong respiratory and eye irritant. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere. Nitrogen dioxide is a criteria pollutant in its own right, and is a precursor of ozone, numerous types of photochemically-generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids.

Nitrogen Oxides (NOx): A group term meaning the combination of nitric oxide and nitrogen dioxide; other trace oxides of nitrogen may also be included in instrument-based NOx measurements. NOx is a precursor of ozone, photochemically-generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids.

Non-native Species: See Invasive Species and Noxious Weed.

Noxious Weed: According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agricultural and commerce of the United States and to the public health.

Nonattainment Area: An area that does not meet a federal or state ambient air quality standard. Federal agency actions occurring in a federal nonattainment area are subject to Clean Air Act conformity review requirements.

O

Off-Highway Vehicle (OHV): Any vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, deriving motive power from any source other than muscle. OHVs exclude: 1) any non-amphibious registered motorboat; 2), any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; 3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used in times of national defense emergencies.

Operation and Maintenance (O&M) Facility. Building and yard constructed to store critical spare parts and provide a building for maintenance services.

Organic Compounds: Compounds of carbon containing hydrogen and possibly other elements (such as oxygen, sulfur, or nitrogen). Major subgroups of organic compounds include hydrocarbons, alcohols, aldehydes, carboxylic acids, esters, ethers, and ketones. Organic compounds do not include crystalline or amorphous forms of elemental carbon (graphite, diamond, carbon black, etc.), the simple oxides of carbon (carbon monoxide and carbon dioxide), metallic carbides, or metallic carbonates.

Overdraft condition: A condition in which the total volume of water being extracted from the groundwater basin would be greater than the total recharge provided to the basin.

Ozone (O3): A compound consisting of three oxygen atoms. Ozone is a major constituent of photochemical smog that is formed primarily through chemical reactions in the atmosphere involving reactive organic compounds, nitrogen oxides, and ultraviolet light. Ozone is a toxic chemical that damages various types of plant and animal tissues and which causes chemical oxidation damage to various materials. Ozone is a respiratory irritant, and appears to increase susceptibility to respiratory infections. A natural layer of ozone in the upper atmosphere absorbs high energy ultraviolet radiation, reducing the intensity and spectrum of ultraviolet light that reaches the earth's surface.

P

Paleontological Resources (Fossils): The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are for understanding past environments, environmental change, and the evolution of life.

Paleontology: A science dealing with the life forms of past geological periods as known from fossil remains.

Paleozoic Era: An era of geologic time (600 million to 280 million years ago) between the Late Precambrian and the Mesozoic eras and comprising the Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Permian periods.

Particulate Matter: Solid or liquid material having size, shape, and density characteristics that allow the material to remain suspended in the atmosphere for more than a few minutes. Particulate matter can be characterized by chemical characteristics, physical form, or aerodynamic properties. Categories based on aerodynamic properties are commonly described as being size categories, although physical size is not used to define the categories. Many components of suspended particulate matter are respiratory irritants. Some components (such as crystalline or fibrous minerals) are primarily physical irritants. Other components are chemical irritants (such as sulfates, nitrates, and various organic chemicals). Suspended particulate matter also can contain compounds (such as heavy metals and various organic compounds) that are systemic toxins or necrotic agents. Suspended particulate matter or compounds adsorbed on the surface of particles can also be carcinogenic or mutagenic chemicals.

Peak Particle Velocity: A measure of ground-borne vibrations. Physical movement distances are typically measured in thousandths of an inch, and occur over a tiny fraction of a second. But the normal convention for presenting that data is to convert it into units of inches per second.

Perennial Yield: The maximum quantity of water that can be annually withdrawn from a groundwater basin over a long period of time [during which water supply conditions approximate average conditions] without developing an overdraft condition.

Petroglyph: Pictures, symbols, or other art work pecked, carved, or incised on natural rock surfaces.

pH (parts hydrogen): The logarithm of the reciprocal of hydrogen-ion concentration in gram atoms per liter.

Physiographic Province: An extensive portion of the landscape normally encompassing many hundreds of square miles, which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin.

Pleistocene (Ice Age): An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciations, during which continental glaciers covered nearly one fifth of the earth's land.

Pliocene: The Pliocene Epoch is the period in the geologic timescale that extends from 5.332 million to 2.588 million years before present.

PM10 (inhalable particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than

50 microns penetrate to the lower respiratory tract (tracheo-bronchial airways and alveoli in the lungs). In a regulatory context, PM_{10} is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 9.5-10.5 microns and an maximum aerodynamic diameter collection limit less than 50 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 10 microns and less than 50 percent for particles with aerodynamic diameters larger than 10 microns.

PM2.5 (fine particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 6 microns penetrate into the alveoli in the lungs. In a regulatory context, PM2.5 is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 2.0-2.5 microns and an maximum aerodynamic diameter collection limit less than 6 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 2.5 microns and less than 50 percent for particles with aerodynamic diameters larger than 2.5 microns.

Precursor: A compound or category of pollutant that undergoes chemical reactions in the atmosphere to produce or catalyze the production of another type of air pollutant.

Prehistoric: Refers to the period wherein American Indian cultural activities took place before written records and not yet influenced by contact with nonnative culture(s).

Programmatic Agreement (PA): A document that details the terms of a formal, legally binding agreement between one party and other state and/or federal agencies. A PA establishes a process for consultation, review, and compliance with one or more federal laws, most often with those federal laws concerning historic preservation.

Proposed Action. Ocotillo Wind Energy Facility .

Protocol Agreement (Protocol): A modified version of the NPA, adapted to the unique requirements of managing cultural resources on public lands in California, and is used as the primary management guidance for BLM offices in the state.

Q

Quaternary Age: The most recent of the three periods of the Cenozoic Era in the geologic time scale of the ICS. It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene Epochs.

R

Rehabilitation: A management alternative and/or practice which restores landscapes to a desired scenic quality.

Restoration (Cultural Resource): The process of accurately reestablishing the form and details of a property or portion of a property together with its setting, as it appeared in a particular period of time. Restoration may involve removing later work that is not in itself significant and replacing missing original work. Also see Stabilization (Cultural Resource).

Riparian: Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or sub-irrigation zone of streams, ponds, and springs.

Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Route: "Routes" represents a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as routes.

S

Saleable Minerals: Common variety minerals on the public lands, such as sand and gravel, which are used mainly for construction and are disposed by sales or special permits to local governments. See also Mineral Materials.

Scale: The proportionate size relationship between an object and the surroundings in which the object is placed.

Scenery: The aggregate of features that give character to a landscape.

Scenic Area: An area whose landscape character exhibits a high degree of variety and harmony among the basic elements which results in a pleasant landscape to view.

Scenic Quality: The relative worth of a landscape from a visual perception point of view.

Scenic Quality Evaluation Key Factors: The seven factors (land form, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications) used to evaluate the scenic quality of a landscape.

Scenic Quality Ratings: The relative scenic quality (A, B, or C) assigned a landscape by applying the scenic quality evaluation key factors; scenic quality A being the highest rating, B a moderate rating, and C the lowest rating.

Scenic Values: See Scenic Quality and Scenic Quality Ratings.

Secretary of the Interior: The U.S. Department of the Interior is in charge of the nation's internal affairs. The Secretary serves on the President's cabinet and appoints citizens to the National Park Foundation board.

Sedimentary Rocks: Rocks, such as sandstone, limestone, and shale, that are formed from sediments or transported fragments.

Sensitivity Levels: Measures (e.g., high, medium, and low) of public concern for scenic quality.

Shaft: See Mine Shaft.

Special Status Species: Federal- or state-listed species, candidate or proposed species for listing, or species otherwise considered sensitive or threatened by state and federal agencies.

State Historic Preservation Office (SHPO): The official within and authorized by each state at the request of the Secretary of the Interior to act as liaison for the National Historic Preservation Act. Also see National Historic Preservation Act.

State Implementation Plan (SIP): Legally enforceable plans adopted by states and submitted to EPA for approval, which identify the actions and programs to be undertaken by the State and its subdivisions to achieve and maintain national ambient air quality standards in a time frame mandated by the Clean Air Act.

State Water Resources Control Board (SWRCB): Created in 1967, joint authority of water allocation and water quality protection enables the State Water Board to provide comprehensive protection for California's waters. The mission of the nine Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology.

Subsurface: Of or pertaining to rock or mineral deposits which generally are found below the ground surface.

Sulfur Dioxide ($SO2$): A pungent, colorless, and toxic oxide of sulfur formed primarily by the combustion of fossil fuels. It is a respiratory irritant, especially for asthmatics. A criteria pollutant in its own right, and a precursor of sulfate particles and atmospheric sulfuric acid.

Supervisory Control and Data Acquisition System (SCADA). A system that allows for controlling and monitoring individual turbines and the wind plant as a whole from a central host computer or a remote personal computer.

T

Tertiary: The Tertiary Period marks the beginning of the Cenozoic Era. It began 65 million years ago and lasted more than 63 million years, until 1.8 million years ago. The Tertiary is made up of 5 epochs: the Paleocene Epoch, the Eocene Epoch, the Oligocene Epoch, the Miocene Epoch, and the Pliocene Epoch.

Texture: The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

Toxic: Poisonous. Exerting an adverse physiological effect on the normal functioning of an organism's tissues or organs through chemical or biochemical mechanisms following physical contact or absorption.

Traditional Cultural Properties: Areas associated with the cultural practices or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity.

Trail: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

U

Undertaking: Equivalent in present analysis to "proposed action" and "proposed project." An undertaking, pursuant to 36 CFR § 800.16(y), "means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval."

V

Vandalism (Cultural Resource): Malicious damage or the unauthorized collecting, excavating, or defacing of cultural resources. Section 6 of the Archaeological Resources Protection Act states that "no person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands...unless such activity is pursuant to a permit issued under section 4 of this Act."

Variables: Factors influencing visual perception including distance, angle of observation, time, size or scale, season of the year, light, and atmospheric conditions.

Variety: The state or quality of being varied and having the absence of monotony or sameness.

Vehicle Miles Traveled (VMT): The cumulative amount of vehicle travel within a specified or implied geographical area over a given period of time.

Viewshed: The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor. Protection, rehabilitation, or enhancement is desirable and possible.

Visual Contrast: See Contrast.

Visual Quality: See Scenic Quality.

Visual Resources: The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures, and other features).

Visual Resource Management Classes: Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape.

Visual Resource Management (VRM): The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

Visual Values: See Scenic Quality.

W

Wetlands: Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

Wilderness Area: An area formally designated by Congress as part of the National Wilderness Preservation System as defined in the Wilderness Act of 1964 (78 Stat.891), Section 2(c).

Wilderness Study Area: A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 603 of FLPMA and section 2(c) of the Wilderness Act of 1964 (78 Stat. 891). Source for both of these is BLM's IMP and Guidelines for Lands Under Wilderness Review (December 1979).

Wind Turbine Generator (WTG). A rotary device that extracts energy from the wind.

8. REFERENCES

ES. Executive Summary

1. Introduction

BLM (U.S. Bureau of Land Management). 1980. California Desert Conservation Area Plan. 1980, as amended March 1999.

EIA (Energy Information Administration). 2007. Annual Energy Outlook 2007 with projections to 2030.

Wind-energy-the-facts.org. 2011. [online]: http://www.wind-energy-the-facts.org/en/part-i-technology/chapter-2-wind-resource-estimation/local-wind-resource-assessment-and-energy-analysis/the-prediction-of-the-energy-production-of-a-wind-farm/wake-effect.html. Accessed May 2011.

2. Proposed Action and Alternatives

BLM (U.S. Bureau of Land Management). 2011. National Environmental Policy Act Compliance for Utility-Scale Renewable Energy Right-of-Way Authorizations. Instruction Memorandum No. 2011-059. U.S. Department of Interior, U.S. BLM, Washington, D.C.

_____. 2005. Final Wind Energy Programmatic Environmental Impact Statement. U.S. Department of Interior, U.S. BLM, Washington, D.C.

_____. 1985. BLM Manual Handbook H-9113-2. Roads – Inventory and Maintenance.

City of Brawley. 2011. Written communication from Rosanna Bayon Moore, Brawley City Manager, to Alan Huber, Elms Equipment Rental, Inc. (sub-contractor to Ocotillo Express LLC). October 27.

Geosyntec Consultants. 2010. Water Resources Availability Study, Non-Groundwater Sources, Sunrise Powerlink, Environmentally Superior Southern Route. April 23, 2010.

Imperial County. 1994. Imperial County – Ocotillo/Nomirage Community Area Plan. Approved April 26, 1994.

OE (Ocotillo Express, LLC). 2010. Draft Plan of Development.

Pattern (Pattern Energy). 2011. Potential Water Sources During Construction. September 26.

3. Affected Environment

3.1 Introduction

None

3.2 Air Resources

CARB (California Air Resources Board). 2007. Resolution 07-19 (July 19) regarding CCR Title 13, Article 4.8, Chapter 9, Section 2449. [online]: info.sen.ca.gov/pub/09-10/bill/sen/sb_0451-0500/sb_464_bill_20090226_introduced.html. Accessed January 2011.

_____. 2010a. Ambient Air Quality Standards available on ARB Website. [online]: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed 2010

_____. 2010b. Air Designation Maps available on ARB website. [online]: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed 2010

_____. 2010c. 2003-2008 NO_2 98th percentile data provided by Marci Nystrom on May 18, 2010

_____. 2011. California Ambient Air Quality Data Statistics available on ARB website. [online]: http://www.arb.ca.gov/adam/ welcome.html. Accessed October 2011.

EPA (United States Environmental Protection Agency). 2010a. The Green Book Nonattainment Areas for Criteria Pollutants. [online]: http://www.epa.gov/oar/oaqps/greenbk/index.html. Accessed 2010.

_____. 2010b. AirData database ambient air quality data for Victorville and Palm Springs, California. [online]: http://www.epa.gov/aqspubl1/annual_summary.html. Accessed 2010.

ICAPCD (Imperial County Air Pollution Control District). 1991. ICAPCD Ozone Air Quality Management Plan.

_____. 1993. ICAPCD Particulate Matter 10 State Implementation Plan (SIP).

_____. 2009a. 2009 1997 8-Hour Ozone Modified Air Quality Management Plan. [online]: http://www.co.imperial.ca.us/AirPollution/ATTAINMENT%20PLANS/2009%20MODIFIED%208-HOUR%20OZONE%20AQMP/ADOPTED%208%20HR%20OZONE%20AQMP%20JULY%202010.pdf

_____. 2009b. 2009 Imperial County State Implementation Plan for Particulate Matter Less Than 10 Microns in Aerodynamic Diameter. [online]: http://www.co.imperial.ca.us/AirPollution/Attainment%20Plans/Final%20IC%202009%20PM10%20SIP%20Document.pdf

_____. 2009c. Final 2009 Reasonably Available Control Technology State Implementation Plan. [online]: http://www.co.imperial.ca.us/AirPollution/Attainment%20Plans/RACT/2010%20RACT%20WORK/ADOPTED%20FINAL%20RACTANALYSIS%20JULY%202010.pdf

Weather Channel. 2010. Monthly Average for Ocotillo, CA. [online]: http://www.weather.com/weather/wxclimatology/monthly/USCA0798. Accessed May 2010.

WRCC (Western Regional Climate Center). 2010. Wind Rose Data for 2009 through 2010 for Boulevard, California. [online]: http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?caCBLV. Accessed 2011.

3.3 Climate Change

CAPCOA (California Air Pollution Control Officers Association). 2010. Quantifying Greenhouse Gas Mitigation Measures. August 2010. http://www.capcoa.org/wp-content/uploads/downloads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

EPA (United States Environmental Protection Agency). 2009. Mandatory Reporting of Greenhouse Gases Rule. [online]: http://www.epa.gov/climatechange/emissions/ghgrulemaking.html.

_____. 2010. Climate Change, Basic Information. [online]: http://www.epa.gov/climatechange/basicinfo.html

_____. 2011a. Final GHG Tailoring Rule. [online]: http://www.epa.gov/NSR/actions.html#2010. Accessed January 2011.

3.4 Cultural Resources

Bean, Lowell J. 1972. Mukat's People: The Cahuilla Indians of Southern California. University of California Press, Berkeley.

Begole, Robert S. 1974. Archaeological Phenomena in the California Desert. Pacific Coast Archaeological Society Quarterly 10(2):51–70.

Bernal, Billie. 1986 Ocotillo A Place in the Sun.

Binford, Lewis R. 1980. Willow Smoke and Dog's Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. American Antiquity 45:4-20.

Childers, W. Morlin. 1980. Evidence of Early Man Exposed at Yuha Pinto Wash. American Antiquity 45(2):297-307.

Erlandson, Jon M. 2007. Sea Change: The Paleocoastal Occupations of Daisy Cave. In Seeking our Past: An Introduction to North American Archaeology, edited by S. W. Neusius and G. Timothy Gross. Oxford University Press.

Erlandson, Jon M. and Roger H. Colten. 1991. An Archaeological Context for Early Holocene Studies on the California Coast. In Early Hunters and Gatherers of Early Holocene Coastal California, edited by Jon M. Erlandson and Roger H. Colten, pp. 1-10. Perspectives in California Archaeology vol 1, Jeanne Arnold, Series Editor, Institute of Archeology, University of California, Los Angeles.

Forbes, Jack D. 1965. Warriors of the Colorado: The Yumas of the Quechan Nation and their Neighbors. University of Oklahoma Press, Norman.

Gallegos & Associates. 2008. Class III Archaeological Inventory for the SDG&E Sunrise Powerlink Project, San Diego and Imperial Counties, CA, Volume 1.

Gifford, E.W. 1931. The Kamia of Imperial Valley. Bureau of American Ethnology, Bulletin 98.

Guerrero, Vladimir. 2005. The Anza Trial and the Settling of California. Santa Clara University and Heyday Books, Berkeley.

Gudde, Erwin G. and William Bright. 1998. California Place Names: The Origin and Etymology of Current Geographical Names. University of California Press.

Hayden, Julian D. 1976. Pre-Altithermal Archaeology in the Sierra Pinacate, Sonora, Mexico. American Antiquity 41:274-89.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California.State of California, The Resources Agency, Department of Fish and Game, Nongame Heritage Program, Sacramento, CA.

Jefferson, G.T. 1974. A Research Strategy for Interior Southern California Archeology. In Perris Reservoir Archaeology, Late Prehistoric Demographic Change in Southeastern California. Edited by James F. O'Connell, Philip J. Wilke, Thomas F. King, and Carol L. Mix. State of California Resources Agency, Department of Parks and Recreation, Division of Resource Management and Protection, Cultural Resources Section. Sacramento, California.

Jenkins, Dennis L. 2007. Distribution and Dating of Cultural and Paleontological Remains at the Paisley Five Mile Point Caves in the Northern Great Basin: An Early Assessment. In Paleoindian or Paleoarchaic? Great Basin Human Ecology at the Pleistocene/Holocene Transition. University of Utah Press, Salt Lake City. Pp. 57-81.

Johnson John R., Thomas W. Stafford, Jr., Henry 0. Ajie, and Don P. Morris. 1999. Arlington Springs Revisited. Paper presented at the 5th California Islands Symposium, Santa Barbara, California.

Justice, Noel D. 2002. Stone Age Spear and Arrow Points of California and the Great Basin. Indiana University Press, Bloomington.

Kroeber, A.L. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Smithsonian Institute, Washington. Reprinted in 1976 by Drover Publications, New York.

Lawton, H.W., and L.J. Bean. 1968. A Preliminary Reconstruction of Aboriginal Agricultural Technology Among the Cahuilla. The Indian Historian 1(5):18-24, 29.

Laylander, Don. 1994. Phase III Data Recovery at the Elmore Site (CA-IMP-6427) Imperial County, California. Report on file with Caltrans District 11, San Diego, California.

Laylander, Don, Debbra Owen, Karen Crafts, and Alan Willis. 1993. Historic Property Survey Report Interstate 8/State Route 98 Rehabilitation, Imperial County, CA.

McDonald, Alison Meg. 1992. Indian Hill Rockshelter and Aboriginal Cultural Adaptation in Anza-Borrego Desert State Park, Southeastern California. Ph.D. dissertation, Department of Anthropology, University of California at Riverside.

Moratto, J.R. 1984. California Archaeology. Academic Press, Inc. San Diego.

Nadeau, Remi A. 1997. The Water Seekers. Crest Publishing, Santa Barbara.

Phillips, George H. 1996. The Enduring Struggle: Indians in California History. Materials for Today's Learning, Sparks, Nevada.

Rogers, Malcolm J. 1966. Ancient Hunters of the Far West, edited by Richard F. Pourade. Union Tribune. San Diego, California.

Russell, John C., Clyde M. Woods, and Jackson Underwood. 2002. An Assessment of the Imperial Sand Dunes as a Native American Cultural Landscape. Document on file with the Bureau of Land Management, Sacramento and Bureau of Land Management, El Centro, California.

Schaefer, Jerry. 1994. The Challenge of Archaeological Research in the Colorado Desert: Recent Approaches and Discoveries. Journal of California and Great Basin Anthropology 16(1):60-80.

Schaefer, Jerry and Don Laylander. 2007. The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn Klar. Altimira Press, Landham, Maryland.

Shipek, Florence. 1982. The Kamia. In APS/SDG&E Interconnection Project: Native American Cultural Resources, edited by Clyde Woods, pp. 21-33. Wirth Associates, Inc., San Diego.

Spier, Leslie. 1923. Southern Diegueño Customs. University of California Publications in American Archaeology and Ethnology 20:292-358.

Starr, Kevin. 2007. California: A History. Modern Library Chronicles Book, New York SWCA Environmental Associates 2008 Final Cultural Resources Survey of Alternatives for the Sunrise Powerlink Project in Imperial, Orange, Riverside, and San Diego Counties, CA.

Tierra (Tierra Environmental Services). 2010a. Final Class II and III Inventory Research Design and Work Plan for the Ocotillo Express Wind Energy Project, Imperial County, California.

_____. 2011a. Draft Archaeological Survey Report for the Ocotillo Express Wind Energy Project, Imperial County, California.

_____. 2011b. The Preliminary Historical Resources Reconnaissance Survey/Evaluation for the Ocotillo Express Wind Energy Project, May, 2011.

Underwood, Jackson. 2004. A Posited Patayan Travel Route Between Pilot Knob and Buttercup Pass. In The Human Journey and Ancient Life in California's Deserts: Proceedings From the 2001 Millennium Conference edited by Mark W. Allen and Judyth Reed. Matarango Museum, Ridgecrest, California

_____. 2008. Were Major Migrations Associated with Lake Cahuilla? Poster presented at the Southwest Symposium, 18 January, Arizona State University, Tempe.

_____. 2009. Posited Major Migrations Associated with Lake Cahuilla. Paper presented at This is Your Life, Jay Von Werlhof: A Symposium Honoring His Nearly 40 Years of Anthropological Contributions in the California Desert. 24 October, Ocotillo, California.

Underwood, Jackson and Russell Collett. 2006. Heritage Resources Survey of Segments of the South Rim Road, Canyon de Chelly National Monument, Arizona. Document on file at Canyon de Chelly National Monument, Arizona.

USDA (United States Department of Agriculture). 1980. Soil Survey of Riverside County, California, Coachella Valley Area. Soil Conservation Service.

Van Wormer, Stephen R. and James D. Newland. 1996. The History of Hedges and the Cargo Muchacho Mining District, Parts I and II. Journal of San Diego History, 42, Numbers 2 and 3.

Van Wormer, Stephen R. and Sue Wade, Susan D. Walter, and Susan Arter. 2007. An Isolated Frontier Outpost: Historical and Archaeological investigations of the Carrizo Creek Stage Station. Document on file with Anza-Borrego State Park, Borrego Springs, California.

Von Werlhof, Jay. 2004. Native Exploitation Strategies for the West and East Mesa Shorelines of Lake Cahuilla, Imperial County. In The Human Journey and Ancient Life in California's Deserts. Proceedings From the 2001 Millennium Conference edited by Mark W. Allen and Judyth Reed. Matarango Museum Publication 15.

Warren, Claude N. and Robert H. Crabtree. 1986. Prehistory of the Southwestern Area. In Handbook of North American Indians, Vol. 11: Great Basin. Edited by Warren L. D'Azevedo, pp. 183-193. Smithsonian Institution, Washington D.C.

Warren, Claude N., Gretchen Siegler and Frank Dittner. 1998. Paleoindian and Early Archaic Periods. In Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study. Report on file with the Metropolitan Wastewater Department, City of San Diego.

Willey, G.R. and P. Phillips. 1958. Method and Theory in American Archaeology. University of Chicago Press.

3.5 Environmental Justice

CEQ (Council on Environmental Quality). 1997. Environmental Justice Guidance Under the National Environmental Policy Act. December 10.

EPA (United States Environmental Protection Agency). 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis. April.

U.S. Census Bureau. 2000a. American Fact Finder, Detailed Tables. [online]: http://factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF3_U&-CONTEXT=dt&-mt_name=DEC_2000_SF3_U_P006&-mt_name=DEC_2000_SF3_U_P087&-tree_id=403&-redoLog=true&-all_geo_types=N&-_caller=geoselect&-geo_id=05000US06025&-geo_id=05000US06073&-geo_id=15000US060250123011&-geo_id=15000US060250123012&-geo_id=15000US060730210003&-geo_id=15000US060730210004&-geo_id=16000US0653378&-search_results=16000US0653378&-format=&-_lang=en. Accessed December 22, 2010.

3.6 Lands and Realty

Airport-Data.com. 2011. OCA6 - Emory Ranch Airport, Ocotillo, CA. [online]: http://www.airport-data.com/airport/0CA6/. Accessed January 3, 2011.

BLM (U.S. Bureau of Land Management). 1980. The California Desert Conservation Area Plan 1980, as amended. [online]: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs.Par.aa6ec747.File.pdf/CA_Desert.pdf. Accessed February 11, 2011.

Burns & McDonnell. 2010. Corridor Conflict Analysis for the Ocotillo Express Wind Farm Project CACA-51552. Burns & McDonnell Engineering Company, Inc. July 2010.

Emory, Neil. 2011. Record of Conversation between Lisa Blewitt of Aspen Environmental Group and Neil Emory, Owner/Manager of the Emory Ranch Airport. January 3.

FLPMA. 2001. Federal Land Policy and Management Act, As Amended. Revised October 2001. [online]: http://www.blm.gov/flpma/index.html. Accessed February 11, 2011.

Imperial County. 2008a. Land Use Ordinance, Title 9. Amended January 29, 2008.

_____. 2008b. Imperial County – General Plan, Land Use Element. Revised January 29, 2008.

_____. 2006. General Plan – Conservation and Open Space Element. Revised October 2006.

_____. 1994. Imperial County – Ocotillo/Nomirage Community Area Plan. Approved April 26, 1994.

3.7 Livestock Grazing

BLM (U.S. Bureau of Land Management). 2010. U.S. Bureau of Land Management – GeoCommunicator. http://www.geocommunicator.gov/GeoComm/index.shtm. Accessed July 20, 2010.

_____. 1980. U.S. Bureau of Land Management. The California Desert Conservation Area Plan 1980, as amended. Livestock Grazing Element.

3.8 Mineral Resources

BLM (U.S. Bureau of Land Management). 2010a. Mining Claims and Sites on Federal Lands. [online]: http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy.Par.28664.File.dat/MiningClaims.pdf. Accessed January 3, 2010.

_____. 2010b. Solid Mineral Programs on the Nation's Federal Land. [online]: http://www.blm.gov/wo/st/en/prog/more/non-energy_minerals/solid_minerals_brochure.html. Accessed January 3, 2010.

DOC (California Department of Conservation). 2007. Mine Reclamation – FAQ. [online]: http://www.consrv.ca.gov/omr/smara/Pages/faq.aspx. Accessed January 3, 2011.

_____. 2000. California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Lands. [online]: http://www.conservation.ca.gov/smgb/Guidelines/Documents/ClassDesig.pdf. Accessed March 1, 2001.

EMKO (EMKO Environmental, Inc.). 2005. Evaluation of Hydrology and Water Quality: New Water Supply Well. Becker Properties, LLC. September 8.

HELIX (HELIX Environmental Planning, Inc.). 2011. Personal communication via email between Shelby Howard, Biology Group Manager, HELIX Environmental Planning, and Aubrey Mescher, Associate Environmental Planner, Aspen Environmental Group. March 14.

Imperial County. 2006. General Plan: Conservation and Open Space Element. [online]: http://www.icpds.com/?pid=832. Accessed January 3, 2011.

_____ (Planning & Development Services Department). 2005. Agreement for Conditional Use Permit #05-0034 for a Commercial Water Well (Becker Properties LLC). September.

MRDS (Mineral Resources Data System). 2010. Mine, Past or Present Producer. [online]: http://tin.er.usgs.gov/mrds/. Accessed December.

NAA (Neil O. Anderson & Associates, Inc.). 2010. Preliminary Geotechnical Investigation, Ocotillo Express Wind Farm, Phase 1, Between Imperial Highway and Interstate [8], West of Ocotillo, California. Prepared for Pattern Energy. September 27.

OE (Ocotillo Express, LLC). 2010. Ocotillo Express Wind Facility Plan of Development.

_____. 2010. Mineral Resources, Online Spatial Data, Mineral Resources Data System: Conterminous US. Package data in KML (for Google Earth) format. [online]: http://tin.er.usgs.gov/mrds/. Accessed January 17, 2010.

3.9 Multiple Use Classes

BLM (U.S. Bureau of Land Management). 1980. The California Desert Conservation Area Plan 1980, as amended. [online]: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs.Par.aa6ec747.File.pdf/CA_Desert_.pdf. Accessed December 28, 2010.

3.10 Noise

Ambrose, Stephen and Rand, Robert. 2010. "Wind Turbine Noise: An independent assessment, noise complaints predictable. First published Knox County Herald Gazette. October 30. [online]: http://www.wind-watch.org/news/2010/10/31/wind-turbine-noise-noise-complaints-predictable/.

Aspen (Aspen Environmental Group). 2011. Ambient noise measurements completed by Jon Davidson and Stan Yeh on January 6, 2011, and January 7, 2011.

BLM (U.S. Bureau of Land Management). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. FES 05-11. June. [online]: http://windeis.anl.gov/documents/ fpeis/index.cfm. Accessed December 28, 2010.

_____. 1980. California Desert Conservation Area Plan (as amended). [online]: http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/cdd/cdcaplan.Par.15259.File.dat/CA_Desert_.pdf. Accessed December 28, 2010.

Brüel and Kjær. 2000. Sound and Vibration Measurement A/S. Environmental Noise Booklet. Document published by The Noise Pollution Clearinghouse (NPC). [online]: www.nonoise.org/library/envnoise/index.htm. Accessed December 27, 2010.

Cummings, Jim. 2010. "Wind Farm Noise – Public Perception and Annoyance" presentation for the Acoustic Ecology Institute. [online]: www.windpoweringamerica.gov/newengland/pdfs/2010/webinar_neweep_wind_turbine_sound_cummings.pdf. Accessed December 3, 2010.

EPA (United States Environmental Protection Agency), Office of Noise Abatement and Control. 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety". March. [online]: http://www.nonoise.org/library/levels74/levels74.htm.

FTA (Federal Transit Administration). 2006. Transit Noise and Vibration Impact Assessment. Final Report, May.

Imperial County. 1993. Imperial County General Plan Noise Element. [online] http://www.icpds.com/?pid=835.

_____. 1998. Imperial County Ordinances. Title 9, Division 7: Noise Abatement and Control. [online] http://www.icpds.com/?pid=573.

LLG (Linscott, Law & Greenspan) Engineers. 2011. Traffic Impact Analysis, Ocotillo Wind Energy Facility, County of Imperial, California. March 17. LLG Ref. 3-10-1956. Included as Appendix H to this EIR/EIS.

NPS (National Park Service). 2009. Effects of Noise. [online]: www.nature.nps.gov/naturalsounds/impacts. Accessed December 27, 2010.

OE (Ocotillo Express, LLC). 2010. Draft Ocotillo Express Wind Facility Plan of Development. October.

Pattern (Pattern Energy Group LP). 2010. Conditional Use Permit Application submitted to Imperial County, including the Plan of Development.

Pedersen, Eja and, Kerstin Persson Waye 2007. "Wind turbine noise, annoyance and self-reported health and well-being in different living environments". Occupational and Environmental Medicine. July; 64(7):480-6. [online]: http://www.wind-watch.org/documents/wp-content/uploads/pedersen-windturbinenoiseannoyance-20070310.pdf. Accessed December 3, 2010.

_____. 2004."Perception and annoyance due to wind turbine noise – a dose-response relationship". Acoustical Society of America Journal, Volume 116, Issue 6, pp. 3460-3470 [DOI: 10.1121/1.1815091]. September 18. [online]: http://maine.gov/dep/blwq/docstand/sitelaw/ Selected%20developments/ Spruce_Mountain/additional_information/9_24_2010/fsm/ exhibit_17.pdf

Pedersen, van den Berg, Bakker, and Bouma. 2009. "Response to noise from modern wind farms in the Netherlands". Acoustical Society of America Journal, Volume 126, Issue 2, pp. 634-643 [DOI: 10.1121/1.3160293]. June 8. [online]: http://geography.ssc.uwo.ca/faculty/baxterj/ readings/ Pedersen_et_al_response_noise_wind_farms_netherlands_JASA_2009.pdf

3.11 Paleontological Resources

Aron, G.L., and Kelly, J., 2010, Confidential paleontological assessment technical report, Ocotillo Express Wind Project: Unpublished report submitted to Aspen Environmental Group and the El Centro BLM Field Office, 47 p.

_____. 2011. Confidential paleontological survey report, Ocotillo Express Wind Project: Unpublished report submitted to Aspen Environmental Group and the El Centro BLM Field Office, 119 p.BLM (U.S. Bureau of Land Management). 1998 (revised). Paleontology Resources Management Manual and Handbook. H-8270-1.

_____. 2007. Potential Fossil Yield Classification System: BLM Instruction Memorandum No. 2008-009 (PFYC revised from USFS, 1996).

_____. 2008. Assessment and Mitigation of Potential Impacts to Paleontological Resources: BLM Instruction Memorandum No. 2009-011.

Dibblee, T.W. 2008a. Geologic Map of the Jacumba 15 Minute Quadrangle: Dibblee Geology Center of the Santa Barbara Museum of Natural History, Map #DF-404 (scale 1:62,500).

_____. 2008b. Geologic Map of the Coyote Wells & Heber 15 Minute Quadrangle: Dibblee Geology Center of the Santa Barbara Museum of Natural History, Map #DF-405 (scale 1:62,500).

_____. 2008c. Geologic Map of the Mount Laguna & Carrizo Mountain 15 Minute Quadrangle: Dibblee Geology Center of the Santa Barbara Museum of Natural History, Map #DF-407 (scale 1:62,500).

_____. 2008d. Geologic Map of the Plaster City and Brawley 15 Minute Quadrangles: Dibblee Geology Center of the Santa Barbara Museum of Natural History, Map #DF-406 (scale 1:62,500).

FLPMA (The Federal Land Policy and Management Act). 1976. Bureau of Land Management and Office of the Solicitor (editors). 1976, 2001. The Federal Land Policy and Management Act of

1976, as amended. U.S. Department of the Interior, Bureau of Land Management Office of Public Affairs, Washington, D.C. 69 pp.

Jefferson, G. 2011. Written communication providing tentative identifications of fossils recovered during the field survey.

OPLA-PRP (Omnibus Public Lands Act, Public Law 111-011, Title VI, Subtitle D, Paleontological Resources Preservation), 2009. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/legislation.Par.32579.File.dat/HR146enrolledbill.pdf.

3.12 Public Health and Safety

American Cancer Society. 1996. "Electromagnetic Field Exposure and Cancer: a Review of Epidemiologic Evidence." A Cancer Journal for Clinicians. January/February.

CDC (Centers for Disease Control and Prevention). 2011. [online]: http://www.cdc.gov/sle/

_____. 2008. Department of Health and Human Services, Division of Vector-Borne Infectious Diseases Website. [online]: http://www.cdc.gov/ncidod/dvbid/westnile/index.htm. Accessed March 5, 2008

CDPH (California Department of Public Health). 2009. [online]: http://www.cdph.ca.gov/data/statistics/Documents/cocci-episummary.pdf

CHP (California Highway Patrol). 2010. CHP Border Division. [online]: http://www.chp.ca.gov/depts_divs_offs/601.html. Accessed December 23, 2010.

DOD (Defense of Defense). 2010. Personal communication. Letter from A.M. Parisi of the Department of the Navy, Naval Air Warfare Center Weapons Division, to Jack Hamby, Acting District Manager, BLM California Desert District. May 25.

DTSC (Department of Toxic Substances Control), 2011. Cortese List: Section 65962.5(a). [online]: http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm. Accessed January 27, 2011.

EDR (Environmental Data Resources, Inc.). 2011. EDR Geocheck Report, Ocotillo Wind Power Area Study. Inquiry Number 2984393.2s. February 4, 2011.

Feychting, M. 2005. "Non-cancer EMF Effects Related to Children." Bioelectromagnetics Supplement 7, pp. S69-74.

Hamilton, Richard. 2011. Short Form of Option Agreement between Pattern Energy and Richard Hamilton. June 29, 2011.

Harding, Graham, Pamela Harding and Arnold Wilkins. 2008. Wind turbines, flicker, and photosensitive epilepsy: Characterizing the flashing that may precipitate seizures and optimizing guidelines to prevent them. Epilepsia Vol 49: 1095-1098.

ICFD (Imperial County Fire Department). 2011. Correspondence from ICFD to the Imperial County Planning and Development Department. August 2, 2011.

ICSO (Imperial County Sheriff's Office). 2009. Contact Us. [online]: http://www.icso.org/contacts.html. Accessed December 20, 2010.

National Institute of Environmental Health Sciences, National Institutes of Health. 1999. NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. Prepared in Response to the 1992 Energy Policy Act. June.

National Research Council/National Academy of Sciences. 1999. Research on Power-Frequency Fields Completed Under the Energy Policy Act of 1992 [Final Report, May 1999].

Pierpoint, Nina. 2009. Wind Turbine Syndrome: A Report on a Natural Experiment. K-Selected Books. Santa Fe. 292 pp.

SkyVector. 2011. Emory Ranch Airport. [online]: http://skyvector.com/airport/0CA6/Emory-Ranch-Airport. Accessed January 27, 2011.

Wind Watch. 2011. Wind Turbine Syndrome. –[online]: http://www.wind-watch.org/documents/wind-turbine-syndrome-3/. Accessed March 20, 2011

World Health Organization. 2001. Fact Sheet No. 263, October 2001, Electromagnetic Fields and Public Health, Extremely Low Frequency Fields and Cancer.

3.13 Recreation

BLM (U.S. Bureau of Land Management). 1980. The California Desert Conservation Area Plan 1980, as amended. [online]: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs.Par.aa6ec747.File.pdf/CA_Desert_.pdf. Accessed December 28, 2010.

_____. 1988. Bureau of Land Management – Management of Designated Wilderness Areas. [online]: http://www.blm.gov/ca/pa/wilderness/wilderness_pdfs/wa/ManagementofDesignat.pdf.

_____. 2002. Bureau of Land Management – Environmental Assessment and Draft Plan Amendment for Western Colorado Desert Routes of Travel Designation. October 2002. [online]: http://www.blm.gov/ca/news/pdfs/weco_2002/weco2002.pdf. Accessed July 27, 2010.

_____. 2010a. Bureau of Land Management – Jacumba Mountains Wilderness. [online]: http://www.blm.gov/ca/pa/wilderness/wa/areas/jacumba.html. Accessed July 27, 2010.

_____. 2010b. Bureau of Land Management – Coyote Mountains Wilderness. [online]: http://www.blm.gov/ca/pa/wilderness/wa/areas/coyote_mountains.html. Accessed July 27, 2010.

_____. 2010c. Bureau of Land Management – Desert Access Guide. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/poi/el_centropoi.html. Accessed January 12, 2011.

_____. 2010d. Bureau of Land Management – Plaster City Open Area. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/ohvs.html. Accessed July 27, 2010.

_____. 2010e. Bureau of Land Management – McCain Valley. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/mccain.html. Accessed July 27, 2010.

_____. 2010f. Bureau of Land Management – Superstition Mountain OHV Open Area. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/ohvs/superstition.html. Accessed July 27, 2010.

_____. 2011a. Bureau of Land Management – Carrizo Gorge Wilderness. [online]: http://www.blm.gov/ca/pa/wilderness/wa/areas/carrizo_gorge.html. Accessed March 29, 2011.

_____. 2011b. Bureau of Land Management – Fish Creek Mountains Wilderness. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/ecwilderness.html. Accessed March 29, 2011.

_____. 2011c. Bureau of Land Management – Sawtooth Mountains Wilderness. [online]: http://www.blm.gov/ca/pa/wilderness/wa/areas/sawtooth_mountains.html. Accessed March 29, 2011.

_____. 2011d. Bureau of Land Management – El Cajon Desert Access Guide. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/poi/el_cajon.html. Accessed May 17, 2011.

_____. 2011e. Bureau of Land Management – Carrizo Gorge. [online]: http://www.blm.gov/ca/pa/wilderness/wilderness_pdfs/wilderness_study_reports/CarrizoGorge.pdf. Accessed May 17, 2011.

CSP (California State Parks). 2005. Anza-Borrego Desert State Park Final General Plan & EIR. [online]: http://www.parks.ca.gov/pages/21299/files/final--001cover-resolutions.pdf. Accessed July 27, 2010.

USFS (U.S. Forest Service). 2011. Cleveland National Forest. About the Cleveland National Forest. [online]: http://www.fs.fed.us/r5/cleveland/about/. Accessed January 11, 2011.

3.14 Social and Economic Setting

BEA (Bureau of Economic Analysis). 2011. BEA : Gross Domestic Product by Metropolitan Area. [online]: http://www.bea.gov/regional/gdpmetro/action.cfm. Accessed May 26.

CAEDD (California Employment Development Department). 2011a. El Centro Metropolitan Statistical Area (Imperial County). [online] http://www.calmis.ca.gov/file/lfmonth/ecen$pds.pdf. Accessed January 25, 2011.

_____. 2011b. San Diego-Carlsbad-San Marcos Metropolitan Statistical Area (San Diego County). [online]: http://www.calmis.ca.gov/file/lfmonth/sand$pds.pdf. Accessed January 25, 2011.

DOF (Department of Finance). 2007. Population Projections for California and Its Counties 2000-2050, by Age, Gender and Race/Ethnicity, Sacramento, California, July 2007. [online]: http://www.dof.ca.gov/research/demographic/reports/projections/p-3/. Accessed December 22, 2010.

_____. 2010a. E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2009 and 2010. Sacramento, California, May 2010. [online]: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/2009-10/view.php. Accessed December 22, 2010.

_____. 2010b. E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010. [online]: http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/view.php. Accessed December 22, 2010.

Ed-Data. 2010a. Imperial County Countywide Profile – Fiscal Year: 2008-2009. [online]: http://www.ed-data.k12.ca.us/Navigation/fsTwoPanel.asp?bottom=%2Fprofile.asp%3Flevel%3D05%26reportNumber%3D16. Accessed, January 5, 2011.

_____. 2010b. San Diego County Countywide Profile – Fiscal Year: 2008-2009. [online]: http://www.ed-data.k12.ca.us/Navigation/fsTwoPanel.asp?bottom=%2Fprofile.asp%3Flevel%3D05%26reportNumber%3D16. Accessed January 5, 2011.

Imperial County. 2011. County of Imperial Adopted Budget. [online]: http://www.co.imperial.ca.us/Budget/Budget2010-11/2010-2011FINALADOPTEDBUDGET.pdf. Accessed May 26.

_____. 2008. County of Imperial 2008-2014 Housing Element. Adopted June 13, 2008. [online] http://www.icpds.com/CMS/Media/Imperial-County-Housing-Element-Final-6-13-08.pdf. Accessed May 26.

IVEDC (Imperial Valley Economic Development Corporation). 2007. Utilities. [online]: http://www.ivedc.com/?pid=39. Accessed January 5, 2011.

SANDAG (San Diego Association of Governments). 2004. San Diego Association of Governments Regional Comprehensive Plan. [online]: http://www.sandag.org/uploads/publicationid/publicationid_1094_3362.pdf. Accessed May 26.

San Diego Real Estate Agent. 2007. San Diego County Utility Information. [online]: http://www.brokerforyou.com/san-diego-utilities-information.htm. Accessed January 5, 2011.

TripAdvisor. 2011. El Centro Hotels and B&Bs: Read El Centro Hotel Reviews and Compare Prices. [online]: http://www.tripadvisor.com/Hotels-g32332-El_Centro_California-Hotels.html. Accessed May 25.

U.S. Census Bureau. 2000a. American Fact Finder, Detailed Tables. [online]: http://factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF3_U&-CONTEXT=dt&-mt_name=DEC_2000_SF3_U_P006&-mt_name=DEC_2000_SF3_U_P087&-tree_id=403&-redoLog=true&-all_geo_types=N&-_caller=geoselect&-geo_id=05000US06025&-geo_id=05000US06073&-geo_id=15000US060250123011&-geo_id=15000US060250123012&-geo_id=15000US060730210003&-geo_id=15000US060730210004&-geo_id=16000US0653378&-search_results=16000US0653378&-format=&-_lang=en. Accessed December 22, 2010.

Woolsey, Matt. 2008. Where U.S. Homeowners Are Losing Value Fastest. [online]: http://www.forbes.com/2008/11/11/homes-equity-lifestyle-forbeslife-cx_mw_1112realestate.html. Accessed May 25.

Yahoo Local 2011. Hotels Motels in Ocotillo, CA on Yahoo! Local. [online]: http://local.yahoo.com/results?csz=Ocotillo+CA&stx=Travel+Lodging+Hotels+Lodging+Hot. Accessed May 25.

Zillow. 2011. Ocotillo Home Prices and Home Values in CA – Zillow Local Info. [online]: http://www.zillow.com/local-info/CA-Ocotillo-home-value/r_56449/#{scid=mor-site-topnavlocalsub}. Accessed May 25.

3.15 Soil Resources

BLM (U.S. Bureau of Land Management). 2010. Final Environmental Impact Statement, Imperial Valley Solar Project. July.

Imperial County. 2006a. General Plan: Conservation and Open Space Element. Revised October.

_____. 2006b. General Plan: Seismic and Public Safety Element.

NAA (Neil O. Anderson & Associates, Inc.). 2010. Preliminary Geotechnical Investigation, Ocotillo Express Wind Farm, Phase 1, Between Imperial Highway and Interstate [8], West of Ocotillo, California. Prepared for Pattern Energy. September 27.

NRCS (Natural Resources Conservation Service). 2010. Official Soil Series Descriptions (OSD): View OSD by Series Name. [online]: https://soilseries.sc.egov.usda.gov/osdname.asp. Accessed January 11, 2011.

_____. 1981. Soil Survey of Imperial County California, Imperial Valley Area. U.S. Department of Agriculture Soil Conservation Service, in coordination with University of California Agricultural Experiment Station and Imperial Irrigation District. October. [online]: http://soildatamart.nrcs.usda.gov/manuscripts/CA683/0/imperial.pdf. Accessed January 11, 2011.

Pattern (Pattern Energy Group LP). 2011. Personal communication. Email transmitted by Natalie McCue of Pattern to Jon Davidson of Aspen. January 27.

3.16 Special Designations

BLM (U.S. Bureau of Land Management). 2009a. California Bureau of Land Management, El Centro Field Office: Plaster City Open Area. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/ohvs/plaster_city.html Accessed September 12. Website modified February 2009.

_____. 2009b. El Centro Wilderness: Jacumba Wilderness. [online]: http://www.blm.gov/ca/pa/wilderness/wa/areas/jacumba.html. Accessed September 12.

_____. 2009c. California Bureau of Land Management, El Centro Field Office: Plaster City Open Area. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/recreation/poi/el_centropoi.html. Accessed September 12. Website modified January 2008.

_____. 2005. Final Wind Energy Programmatic Environmental Impact Statement. U.S. Department of Interior, U.S. BLM, Washington, D.C.

_____. 2004. California Bureau of Land Management, El Centro Field Office: Exploring the Yuha Desert. [online]: http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pdfs/elcentro_pdfs.Par.0f9ac3ce.File.dat/yuha_blm.pdf Accessed September 12, 2009.

_____. 1980. U.S. Bureau of Land Management. The California Desert Conservation Area Plan 1980, as amended. Livestock Grazing Element.

Desert USA. 2011. [online]: http://www.desertusa.com/anza_borrego/du-abpmain.html. Accessed on May 19.

3.17 Transportation and Public Access

LL&G. 2011. Traffic Impact Analysis, Ocotillo Wind Energy Facility, County of Imperial, California, March 17, 2011.

3.18 Vegetation Resources

ACOE (U.S. Army Corps of Engineers). 2007. Questions and Answers for Rapanos and Carabell Decisions. June 5. 21 pp.

_____. 2005. Ordinary High Water Mark Identification. Regulatory Guidance Letter No. 05-05. 7 December.4 pp.

ACOE and EPA (U.S. Army Corps of Engineers and U.S. Environmental Protection Agency). 2007. Jurisdictional Determination Form Instructional Guidebook. May 30. 60 pp.

BLM (U.S. Bureau of Land Management). 2010. Definition of Noxious and Invasive.

_____. 2009. Survey Protocols for NEPA/ESA Compliance for BLM Special Status Plant Species.

_____. 2007. California Desert Conservation Area. [online]: http://www.blm.gov/ca/st/en/fo/cdd/cdca_highlights.html. Accessed winter 2011.

_____. 2004. List of California-BLM Sensitive Plants. April.

_____. 1980 (as amended). The California Desert Conservation Area Plan.

Calflora: Information on California plants for education, research and conservation. [web application]. 2010. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/index.html (Accessed: March 16, 2010).

California Department of Food and Agriculture. 2011a. Federal Weed List. [online]: http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-fednoxweeds.htm. Accessed winter 2011.

_____. 2011b. Section 5004, Food and Agricultural Code.

_____. 2011c. Encycloweedia: Weed Ratings. Available at http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/winfo_weedratings.htm. Accessed September 13, 2011.

Cal-IPC (California Invasive Plant Council). 2006. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council; Berkeley, CA. Online database. [online]: http://www.cal-ipc.org/ip/inventory/weedlist.php?region=DSon. Accessed winter 2011.

CDFG (California Department of Fish and Game) California Natural Diversity Data Base (CNDDB). 2010. Accessed September 27. RareFind Database Program. [online]: http://www.dfg.ca.gov/biogeodata/cnddb/.

_____. 2010. Hierarchical List of Natural Communities with Holland Types. September.

_____. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. November 24.

CERES (The California Environmental Resources Evaluation System). 2011. California's Bioregions. [online]: http://ceres.ca.gov/geo_area/bioregions/mapindex.html. Accessed winter 2011.

CNPS (California Native Plant Society). 2011. Inventory of Rare and Endangered Plants (online edition, v7-10c). California Native Plant Society. Sacramento, CA. [online]: http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi (Accessed: March 16, 2010 and April 5, 2011)

EPA and ACOE (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers). 2007. Joint Guidance to Sustain Wetlands Protection under Supreme Court Decision. 2 pp.

Grumbles, B.H. and J.P. Woodley, Jr. 2007. Memorandum: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States. June 5. 12 pp.

HELIX (HELIX Environmental Planning, Inc.). 2011a. Biological Technical Report for Ocotillo Express Wind Project. June 14

_____. 2011b. Jurisdictional Delineation for Ocotillo Wind Energy Facility. April 25.

_____. 2011c. Results of Fall 2010 Sensitive Plant Surveys for the Ocotillo Wind Energy Facility Project. August 10.

_____. 2011d. Results of Spring 2011 Special Status Plant Surveys for the Ocotillo Wind Energy Facility Project. August 30.

_____. 2011e. Addendum to the Spring 2010 Rare Plant Survey Report, Ocotillo Wind Energy Facility Project (CACA 51552). October 18.

_____. 2010. Ocotillo Wind Energy Project Spring 2010 Rare Plant Survey Report. November 10.

Imperial County. 2009. Land Use Ordinance, Title 9, Division 10. Last amendment October 27.

_____. 2008. General Plan Land Use Element. January 29. [online]: http://www.icpds.com/CMS/Media/Land-Use-Element-(2008).pdf

_____. 1993. General Plan. [online]: http://www.icpds.com/?pid=571 Accessed winter 2011.

Lichvar, R.W. and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TR-08-12. Hanover, NH. U.S. Army Engineer Research and Development Center. August.

Mattson, M., M. Bantilan-Smith, L. Cervantes, R. Lichvar, and K. Curtis of U.S. Army Corps of Engineers. 2010. Personal communication between the aforementioned and B. Jones, S. Howard, and W.L. Sward of HELIX. November 12.

Sawyer, J. O., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation*. Second Edition. University of California Press, Berkeley, March.

Yatskievych, G. 2002. Rafflesiaceae. Page 446 in Baldwin, B.G., et al., editors. 2002. The Jepson Desert Manual - Vascular Plants of Southeastern California. University of California Press. Berkeley and Los Angeles, California.

3.19 Visual Resources

BLM (U.S. Bureau of Land Management). 1998. BLM Special Edition, Surface Management Status Desert Access Guide. California Desert District: El Centro 1:100,000 scale Topographic Map.

_____. 1997. BLM Special Edition, Surface Management Status Desert Access Guide. California Desert District: El Cajon 1:100,000 scale Topographic Map.

_____. 1986. Visual Resource Inventory Manual H 8410 1.

_____. 1986. Visual Resource Contrast Rating Manual 8431.

_____. 1984. Visual Resource Management Manual 8400.

_____. 1980. The California Desert Conservation Area Plan.

California Department of Transportation. 2010. State Scenic Highway System Website: [online]: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

CSP (California State Parks). 2005. Anza-Borrego Desert State Park Final General Plan and EIR. February 11, 2005.

Earthwalk Press. 2005. Anza-Borrego Desert Region Recreation Map.

Hunt, Charles B. 1974. Natural Regions of the United States and Canada. W.H. Freeman and Company, San Francisco.

Imperial County. 1993. General Plan, Conservation and Open Space Element. [online]: http://www.icpds.com/?pid=571 Accessed spring 2011.

Wilderness Press. 2006. Anza-Borrego Desert Region and the Yuha Desert Map.

3.20 Water Resources

ACOE (U.S. Army Corps of Engineers). 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual. ERDC/CRREL TR-08-12. August. [online]: www.crrel.usace.army.mil/library. Accessed February 5, 2010.

BECC (Border Environment Cooperation Commission). 2011. Seeley Water and Wastewater System Improvements. [online]: http://www.cocef.org/aproyectos/ExcomSeeley2003_10ing.htm. Accessed December 12, 2011.

B-E (Bookman-Edmonston, a Division of GIE Consultants, Inc.). 2004. Ocotillo / Coyote Wells Hydrology and Groundwater Modeling Study. Prepared for U.S. Gypsum Company. Unpublished work, January 16. [online]: ftp://ftp.co.imperial.ca.us/icpds/eir/usg/draft/26deir-appendixb-hydrology3.pdf. Accessed October 27, 2010.

BLM (U.S. Bureau of Land Management). 2001. California Water Rights Fact Sheet. August 15. [online]: http://www.blm.gov/nstc/WaterLaws/pdf/California.pdf. Accessed January 28, 2011.

CEC (California Energy Commission). 2010. Docket 08-AFC-5. Seeley Wastewater Reclamation Facility Improvements, Appendix 1. [online]: http://www.energy.ca.gov/sitingcases/solartwo/documents/2010-03-18_Appendix-1_Seeley_Wastewater_Reclamation_Facility_Improvements_TN-55984.pdf. Accessed December 12, 2011.

CASQA (California Stormwater Quality Association). 2009. Stormwater Best Management Practices: Dewatering Operations (NS-2). [online]: http://www.ocwatersheds.com/Documents/2009_CASQA_ConBMP_Handbook/Non-StormwaterBMPs/NS-2.pdf. Accessed January 31, 2011.

City of Brawley. 2011. Written communication from Rosanna Bayon Moore, Brawley City Manager, to Alan Huber, Elms Equipment Rental, Inc. (sub-contractor to Ocotillo Express LLC). October 27.

_____. 2010. City of Brawley 2010 Urban Water Management Plan. Prepared by Dynamic Consulting Engineers, Inc. Adopted June 2011.

Colorado River Basin RWQCB (Regional Water Quality Control Board). 2006. Water Quality Control Plan – Colorado River Basin – Region 7. [online]: http://www.swrcb.ca.gov/rwqcb7/publications_forms/publications/index.shtml. Accessed October 27, 2010.

County of San Diego. 2007. Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources. Prepared by the Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. [online]: http://www.co.san-diego.ca.us/dplu/docs/GRWTR-Guidelines.pdf. Accessed May 19, 2011.

_____. 2004. Groundwater Limitations Map. April 2. [online]: http://www.sdcounty.ca.gov/dplu/docs/precip030104_small.pdf. Accessed May 23, 2011.

_____. 2003. Determination of Nonconforming Use for A Water Distribution Business on property Known as Assessor Parcel Number 406-251-06-00. Written communication from Van L'Ford, Code Enforcement Officer, County of San Diego Department of Planning and Land Use, to Alfred E. Martin. March 3.

DWR (California Department of Water Resources). 2010. Hydrologic Regions of California: South Coast. Basins and Subbasins of the South Coast Hydrologic Region. [online]: http://www.water.ca.gov/groundwater/bulletin118/south_coast.cfm. Accessed December 27, 2010.

_____. 2004a. California's Groundwater Bulletin 118. Hydrologic Region Colorado River. Coyote Wells Valley Groundwater Basin. [online]: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-29.pdf. Accessed January 31, 2011.

_____. 2004b. California's Groundwater Bulletin 118. Hydrologic Region South Coast. Cottonwood Valley Groundwater Basin. [online]: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/9-27.pdf. Accessed January 31, 2011

_____. 2004c. California's Groundwater Bulletin 118. Hydrologic Region South Coast. Campo Valley Groundwater Basin. [online]: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/9-28.pdf. Accessed January 31, 2011.

_____. 2004d. California's Groundwater Bulletin 118. Hydrologic Region South Coast. Potrero Valley Groundwater Basin. [online]: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/9-29.pdf. Accessed January 31, 2011.

_____. 2003a. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 (to assist water suppliers, cities, and counties in integrating water and land use planning). [online]: http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf. Accessed January 31, 2011.

_____. 2003b. California's Groundwater Bulletin 118. Update 2003. March. [online]: http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_entire.pdf. Accessed May 23, 2011.

EPA (United States Environmental Protection Agency). 2011a. Drinking Water Contaminants. [online]: http://water.epa.gov/drink/contaminants/index.cfm. Accessed May 24, 2011.

_____. 2011b. Email communication from Jamelya Curtis of the Environmental Protection Agency, to James Dermody, Glen Hodges, and Natalie McCue of Pattern Energy. September 27.

_____. 2008. Campo-Cottonwood Sole Source Aquifer Designated Area. [online]: http://www.epa.gov/safewater/sourcewater/pubs/qrg_ssamap_campocottonwood.pdf. Accessed January 31, 2011.

_____. 2001. Ocotillo-Coyote Wells Sole Source Aquifer Designated Area. [online]: http://www.epa.gov/safewater/sourcewater/pubs/qrg_ssamap_ocotillocoyotewells.pdf. Accessed January 31, 2011.

_____. 2000. Sole Source Aquifer Designations in EPA, Region 9. June. [online]: http://www.epa.gov/region9/water/groundwater/ssa-pdfs/ssafact.pdf. Accessed January 31, 2011.

FEMA (Federal Emergency Management Agency). 2008. Flood Insurance Rate Map #06025C1976C, Panel 1976 of 2300. [online]: http://www.msc.fema.gov. Accessed December 10, 2010.

IID (Imperial Irrigation District). 2009a. Integrated Water Resources Management Plan, Executive Summary. [online]: http://www.iid.com/index.aspx?page=120. Accessed October 25, 2010.

_____. 2009b. Draft Final IID Plan, dated September, 2009. [online]: http://www.imperialirwmp.org/IIDReportSept09_CH1_4.pdf. Accessed January 31, 2011.

_____. 2009c. IID Interim Water Supply Policy for Non-Agricultural Projects. [online]: http://www.iid.com/Modules/ShowDocument.aspx?documentid=269. Accessed February 16, 2012.

_____. 2009d. Integrated Water Resources Management Plan. Volume 2, Appendix A: Project Scoping Report – Review & Evaluation of Water Management Strategies. [online]: http://www.iid.com/Modules/ShowDocument.aspx?documentid=534. Accessed December 12, 2011.

_____. 2008. IID Water Supply Assessment/Water Supply Verification Consultation Process. Communication from Tina Anderholt Shields, PE, IID Assistant Water Department Manager, to Mr. Jurg Heuberger, IID Planning Director. [online]: http://www.iid.com/index.aspx?page=159. Accessed October 26, 2010.

_____. 1993. Imperial Irrigation District, Petitioner, v. United States Environmental Protection Agency, Respondent. No. 93-70094. United States Court of Appeals, Ninth Circuit. Argued and Submitted July 12, 1993. Decided Sept. 7, 1993. [online]: http://openjurist.org/4/f3d/774/imperial-irrigation-district-v-united-states-environmental-protection-agency. Accessed June 14, 2011.

Imperial County. 2007. Imperial County Flood Management Plan. February. [online]: www.co.imperial.ca.us/EmergencyPlans/FloodMitigationPlan.pdf. Accessed October 25, 2010.

_____. 1993. Imperial County General Plan: Water Element. [online]: http://www.icpds.com/?pid=838. Accessed October 25, 2010.

NAA (Neil O. Anderson & Associates, Inc.). 2010. Preliminary Geotechnical Investigation, Ocotillo Express Wind Farm, Phase 1, Between Imperial Highway and Interstate [8], West of Ocotillo, California. Prepared for Pattern Energy. September 27.

_____. 2011. Hydrological and Environmental Hazard Assessment. Ocotillo Express Wind Farm, Imperial County. February 18.

OE (Ocotillo Express, LLC). 2010. Ocotillo Express Wind Facility Plan of Development Draft. October.

Pattern (Pattern Energy). 2011. Potential Water Sources During Construction. September 26.

PCW (Project Clean Water). 2010. Tijuana Watershed. [online]: http://www.projectcleanwater.org/html/ws_tijuana.html. Accessed December 27, 2010.

PVMWC (Pine Valley Mutual Water Company). 2010. Website. [online]: http://www.pinevalleywater.org/company-history.html. Accessed December 27, 2010.

San Diego County, 2010. General Plan Update Groundwater Study. Appendix E: Pine Valley Cumulative Groundwater Study. April. [online]: http://www.sdcounty.ca.gov/dplu/gpupdate/docs/BOS_Aug2011/EIR/Appn_D_GW_Appendices.pdf. Accessed October 22, 2011.

SWRCB (State Water Resources Control Board). 2004. Storm Water Program: Phase II Small MS4 General Permit Questions and Answers. [online]: http://www.swrcb.ca.gov/water_issues/programs/stormwater/smallms4faq.shtml. Accessed October 25, 2010.

Todd (Todd Engineers). 2007. Appendix C-1: Todd Engineers Review of Groundwater Issues, US Gypsum Expansion/Modernization Project. July 30. [online]: http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/elcentro/nepa/2008/eis/usg.Par.25569.File.dat/AppendixC.pdf. Accessed June 14, 2011.

3.21 Wild Horses and Burros

BLM. (U.S. Bureau of Land Management). 2006. Wild Horses and Burros. [online]: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/wild_horses_and_burros/public_land_stats.Par.24343.File.dat/ca_south_ha_hma_map.pdf. Accessed July 20, 2010.

_____. 2010a. U.S. Bureau of Land Management – Wild Horses and Burros. [online]: http://www.blm.gov/ca/st/en/prog/wild_horse_and_burro.1.html. Accessed July 20, 2010.

_____. 2010b. U.S. Bureau of Land Management – GeoCommunicator. [online]: http://www.geocommunicator.gov/GeoComm/index.shtm. Accessed July 20, 2010.

3.22 Wildland Fire Ecology

CAL FIRE (California Department of Forestry and Fire Protection). 2007. Map: Fire Hazard Severity Zoning DRAFT, 1-2007, all jurisdictions, Imperial County. [online]: http://frap.cdf.ca.gov/data/frapgismaps/download.asp

_____. 2008. Map: Fire Perimeters. [online]: http://frap.cdf.ca.gov/data/frapgismaps/download.asp

California Board of Forestry and Fire Protection, 2010. 2010 Strategic Fire Plan for California. June.

NERC (North American Electric Reliability Corporation), 2006. Transmission Vegetation Management Program. Standard FAC-003-1. April 7.

_____. 2011. North American Electric Reliability Corporation Website: About NERC. [online]: http://www.nerc.com/page.php?cid=1 Accessed June 16.

3.23 Wildlife Resources

Aspen (Aspen Environmental Group). 2008. Final Environmental Impact Report/Environmental Impact Statement and Proposed Land Use Amendment, San Diego Gas and Electric Company Application for the Sunrise Powerlink Project. SCH #2006091071. DOI Control No. FES-08-54. California Public Utility Commission and U.S. Department of Interior, Bureau of Land Management. October 28.

Audubon California. 2011. [online]: http://ca.audubon.org//birds/condor.php. Site accessed May 24, 2011.

Audubon WatchList. 2011. Brewer's Sparrow. [online]: http://audubon2.org/watchlist/viewSpecies.jsp?id=46 Accessed winter 2011.

Bats of San Diego County. 2006. [online] http://home.earthlink.net/~cmsquare/. Accessed Winter 2011.

BLM (U.S. Bureau of Land Management). 2007. California Desert Conservation Area. [online]: http://www.blm.gov/ca/st/en/fo/cdd/cdca_highlights.html. Accessed winter 2011.

_____. 1980 (as amended). The California Desert Conservation Area Plan.

_____. 2010. Instruction Memorandum No. 2010-156. Bald and Golden Eagle Protection Act – Golden Eagle National Environmental Policy Act and Avian Protection Plan Guidance for Renewable Energy. July 13, 2010. Expires September 30, 2011. [online]: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/IM_2010-156.html.

Boyce, Walter. 2011. Ocotillo Express Project and Bighorn Sheep: Impacts and Recommendations. April 15.

California Herps.com. 2011. Uma notata - Colorado Desert Fringe-toed Lizard. [online]: http://www.californiaherps.com/lizards/pages/u.notata.html. Accessed Winter 2011.

CBOC (The California Burrowing Owl Consortium). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April.

CDFG (California Department of Fish and Game). 1999. California Wildlife Habitat Relationship System. Black Rail. [Life history accounts for species in the California Wildlife Habitat Relationships System were originally published in: Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California. Updates are noted in accounts that have been added or edited since original publication.]

_____. 1994. California Amphibian and Reptile Species of Special Concern. November 1.

_____. 1990. California's Wildlife. Volumes II (Birds) and III (Mammals). Edited by David C. Zeiner, William F. Laudenslayer, Jr., Kenneth Mayer, and Marshall White. State of California, Resources Agency, Sacramento, CA.

_____. 2004. California Rare and Endangered Reptiles

_____. 2010. Survey Protocol for the Barefoot Banded Gecko (*Coleonyx switaki*).

_____. 2011. Special Animals (883 taxa). State of California, The Resources Agency, Department of Fish and Game, Biogeographic Data Branch, California Natural Diversity Database. [online]: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf. January.2004. California Rare and Endangered Reptiles.

CDPR (California Department of Pesticide Regulation) Endangered Species Project/California Department of Fish & Game. Undated. Yuma Clapper Rail information. [online]: http://www.cdpr.ca.gov/docs/endspec/espdfs/ycrbio.pdf. Accessed May 25, 2011

CEC and CDFG (California Energy Commission and California Department of Fish and Game). 2007. California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development. Commission Final Report. California Energy Commission, Renewables Committee, and Energy Facilities Siting Division, and California Department of Fish and Game, Resources Management and Policy Division. CEC7002007008CMF.

CERES (The California Environmental Resources Evaluation System). 2011. California's Bioregions. [online]: http://ceres.ca.gov/geo_area/bioregions/mapindex.html. Accessed Winter 2011.

CNDDB (California Natural Diversity Data Base). 2010. Accessed September 27. RareFind Database Program. [online]: http://www.dfg.ca.gov/biogeodata/cnddb/.

CSP (California State Parks). 2007. HELIX communication with Anza-Borrego Desert State Park staff, Conservation Biology Institute, U.S. Fish and Wildlife Service, and California Department of Fish and Game. February 1.

DeTect, Inc. 2011. Merlin™ Avian Radar Survey for the Proposed Ocotillo Wind Project. Year 1 Data Report, September 15, 2010-July 9, 2011. Prepared for Pattern Energy Group LP. September 8.

Dugan, E.A. 2011a. Barefoot Banded Gecko Report for the Ocotillo Wind Energy Project. January 7.

Dugan, Eric A. 2011b. Ocotillo Wind Energy Project Barefoot Banded Gecko Survey Report. August 29.

FTHL ICC (Flat-tailed Horned Lizard Working Group of Interagency Coordinating Committee). 2003. Flat-tailed Horned Lizard Rangewide Management Strategy 2003 Revision.

Grismer, L. Lee. 2002. Amphibians and Reptiles of Baja California. Including its Pacific Islands and the Islands in the Sea of Cortés. Berkeley: University of California Press.

HELIX (HELIX Environmental Planning, Inc.). 2010a. Ocotillo Wind Energy Project, Proposed Biology Survey Protocols. February 17.

_____. 2010b. Ocotillo Wind Energy Project, Flat-Tailed Horned Lizard Survey Report. October 25.

_____. 2010c. Ocotillo Wind Energy Project, Raptor Migration Report. December 7.

_____. 2010d. Ocotillo Wind Energy Project, Avian Point Count Report. December 7.

_____. 2010e. Results of 2010 Burrowing Owl Surveys for the Ocotillo Wind Energy Project. December 9.

_____. 2011c. Biological Technical Report for Ocotillo Express Wind Project. June 14

_____. 2011d. Results of Spring 2011 Raptor Migration Counts for the Ocotillo Wind Energy Projects. September 7.

_____. 2011e. Results of 2011 Burrowing Owl Surveys for the Ocotillo Wind Energy Project. Letter report to Jon Davidson, Aspen Environmental Group. August 29.

Imperial County. 2009. Land Use Ordinance, Title 9, Division 10. Last amendment October 27.

_____. 2008. General Plan Land Use Element. January 29. [online]: http://www.icpds.com/CMS/Media/Land-Use-Element-(2008).pdf

_____. 1993. General Plan. [online]: http://www.icpds.com/?pid=571 Accessed winter 2011.

Leopold, Aldo. 1933. Game Management. Charles Scribner's Sons. Reprinted in 1986 by University of Wisconsin Press, Madison.

McCreedy, C. 2008. Gila Woodpecker (*Melanerpes uropygialis*). In The Desert Bird Conservation Plan. California Partners in Flight. [online]: http://www.prbo.org/calpif/htmldocs/desert.html Accessed winter 2011.

OE (Ocotillo Express, LLC). 2011. Ocotillo Wind Energy Facility Plan of Development (Draft). March 16.

Rahn Conservation Consulting. 2011a. Bat Surveys for Ocotillo Wind Energy Project. January.

_____. 2011b. Memorandum to Shelby Howard, HELIX Environmental Planning, Inc. from Matt Rahn providing a summary of initial results for Ocotillo bat surveys 2010-2011. July 22.

Rubin, E.S., C.J. Stermer, W.M. Boyce, and S.G. Torres. 2009. Assessment of Predictive Habitat Models for Bighorn Sheep in California's Peninsular Ranges. Journal of Wildlife Management 73(6): 859-869.

Shuford, W.D., and T. Gardali, editors. 2008a. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. pp. 79–84 (Brant).

_____. 2008b. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. pp. 254-259 (Vaux's Swift).

_____. 2008c. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. pp. 249–253 (Black Swift).

_____. 2008d. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. pp. 332-339 (Yellow Warbler).

Snyder, S.A. 1993. *Circus cyaneus*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). [online]: http://www.fs.fed.us/database/feis/. Accessed January 31, 2011.

Sullivan, Janet. 1996. *Taxidea taxus*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). [online]: http://www.fs.fed.us/database/feis/animals/mammal/tata/all.html Accessed winter 2011.

USFWS (U.S. Fish and Wildlife Service). 2011a. Environmental Conservation Online System (ECOS). [online]: http://ecos.fws.gov/ecos/indexPublic.do. Accessed winter 2011.

_____. 2011b. Draft Eagle Conservation Plan Guidance. January.

_____. 2010a. Endangered and Threatened Wildlife and Plants; Listing the Mountain Plover as Threatened. Federal Register. 75 (124): 37353-37358.

_____. 2010b. Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance. February.

_____. 2010c. Biological Opinion for the Sunrise Powerlink Project. FWS-08B0423-11F0047. November 10.

_____. 2009a. Yuma Clapper Rail (*Rallus longirostris yumanensis*) Recovery Plan. Draft First Revision. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico.

_____. 2009b. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Peninsular Bighorn Sheep and Determination of a Distinct Population Segment of Desert Bighorn Sheep (*Ovis canadensis nelsoni*). Final Rule, Effective May 14, 2009. 50 CFR Part 17, 74 FR 17287 17365.

_____. 2001. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for Peninsular Bighorn Sheep. Final Rule. February 1. 66 FR 8650 8677.

_____. 2000. Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California. U.S. Fish and Wildlife Service, Portland, OR. Xv + 251 pp.

_____. 1973. Endangered Species Act of 1973 as Amended Through the 108th Congress. December 28.

Unitt, P.A. 2007. Collection Manager, Department of Birds and Mammals, San Diego Natural History Museum. E-mail communication to HELIX for the Sunrise Powerlink Project, May 29 and June 6.

_____. 2004. San Diego County Bird Atlas. Proceedings of the San Diego Society of Natural History, No. 39. Weigand, J. and S. Fitton. 2008. Le Conte's Thrasher (*Toxostoma lecontei*). In The Draft Desert Bird Conservation Plan: a strategy for reversing the decline of desert-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/desert.html

Western Bat Working Group. 2005. Cave Myotis (*Myotis velifer*) Species Account.

Weigand, J. and S. Fitton. 2008. Le Conte's Thrasher (Toxostoma lecontei). In The Draft Desert Bird Conservation Plan: a strategy for reversing the decline of desert-associated birds in California. California Partners in Flight. Available: http://www.prbo.org/calpif/htmldocs/desert.html (Accessed: April 10, 2011).

Winter, K and L. Hargrove. 2004. Gray Vireo (*Vireo vicinior*). In The Coastal Scrub and Chaparral Bird Conservation Plan: a strategy for protecting and managing coastal scrub and chaparral habitats and associated birds in California. California Partners in Flight. [online]: http://www.prbo.org/calpif/htmldocs/scrub.html. Accessed Winter 2011.

Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsoni*). In The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. [online]: http://www.prbo.org/calpif/htmldocs/riparian_v-2.html. Accessed winter 2011.

WRI (Wildlife Research Institute, Inc.). 2011. [Confidential] Golden Eagle Surveys Surrounding the Ocotillo Express Wind Farm Project Area in Imperial County, California. January 11.

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

4. Environmental Consequences

4.1 Introduction

BLM (U.S. Department of the Interior Bureau of Land Management). 2011. Renewable Energy Projects in the California Desert District. [online]: http://www.blm.gov/ca/st/en/fo/cdd/alternative_energy.html. Accessed March 24, 2011.

CEC (California Energy Commission). 2011. Renewable Energy Action Team – Generation Tracking for Renewable Projects. February 25. [online]: http://www.energy.ca.gov/33by2020/documents/renewable_projects/Tracking_Report_for_Renewable_Projects.pdf.

CEQ (Council on Environmental Quality) 1997. Considering Cumulative Effects Under the National Environmental Policy Act.

4.2 Air Resources

CPUC (California Public Utilities Commission). 2011.Construction Progress for Sunrise Powerlink Project. [online]: http://www.cpuc.ca.gov/environment/info/aspen/sunrise/sunrise.htm

EPA (United States Environmental Protection Agency). 2011. General Conformity *De Minimis* Levels. [online]: http://www.epa.gov/air/genconform/deminimis.html

ICAPCD (Imperial County Air Control Pollution District). 2007. CEQA Handbook. [online]: http://www.co.imperial.ca.us/AirPollution/Forms%20&%20Documents/CEQA/CEQA%20Handbk%20Nov%202007.pdf

SCAQMD (Southern California Air Quality Management District). 2011. SCAQMD CEQA Air Quality Analysis Guidance Handbook Website. http://www.aqmd.gov/ceqa/hdbk.html. Accessed 2011.

SDG&E (San Diego Gas & Electric). 2008. Final Environmental Impact Report/Environmental Impact Statement and Draft Land Use Plan Amendment for Sunrise Powerlink Project. [online]: http://www.cpuc.ca.gov/environment/info/aspen/sunrise/toc-feir.htm

Wind Zero. 2011a. Final Environmental Impact Report for the Coyote Wells Specific Plan Project. [online]: http://www.icpds.com/?pid=2308

_____. 2011b. Coyote Wells Specific Plan Project. [online]: ftp://ftp.co.imperial.ca.us/icpds/specific-plan/coyote-wells/04specific-plan-doc.pdf

4.3 Climate Change

CARB (California Air Resources Board). 2008. Preliminary Draft Staff Proposal – Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act. Released October 24, 2008. [online]: http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf

EPA (United States Environmental Protection Agency). 2011. How clean is the electricity I use? - Power Profiler. [online]: http://www.epa.gov/cleanenergy/energy-and-you/how-clean.html. Accessed October 2011.

SCAQMD (Southern California Air Quality Management District). 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. [online]: http://www.aqmd.gov/hb/2008/December/081231a.htm. Accessed 2010.

Stone, Richard. 2008. News of the Week, Ecosystems: Have Desert Researchers Discovered a Hidden Loop in the Carbon Cycle?. Science 13 June 2008. Volume 320, No. 5882, pp 1409-1410.

4.4 Cultural Resources

BLM (U.S. Bureau of Land Management), 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. June. [online]: http://windeis.anl.gov/documents/fpeis/index.cfm. Accessed December 28, 2010.

OE (Ocotillo Express, LLC), 2010. Ocotillo Express Wind Facility Plan of Development Draft. October.

Tierra. 2011a. The Preliminary Historical Resources Reconnaissance Survey/Evaluation for the Ocotillo Express Wind Energy Project, May, 2011.

USDA Forest Service (Pacific Southwest Region), 2009. Forest Visitor Maps: Cleveland National Forest. [online]: http://www.fs.fed.us/r5/forestvisitormaps/cleveland/. Accessed April 25, 2011.

4.5 Environmental Justice

U.S. Census Bureau. 2000b. American Fact Finder, Detailed Tables. [online]: http://factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-mt_name=DEC_2000_SF1_U_P003&-CONTEXT=dt&-tree_id=4001&-all_geo_types=N&-geo_id=100$10000US060250123011500&-geo_id=15000US060250123011&-search_results=100$10000US060250123011500&-format=&-_lang=en. Accessed December 22, 2010.

U.S. Census Bureau. 2000c. American Fact Finder, Detailed Tables. [online]: http://factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-CONTEXT=dt&-mt_name=DEC_2000_SF1_U_P003&-tree_id=4001&-redoLog=true&-all_geo_types=N&-_caller=geoselect&-geo_id=100$10000US060730210003177&-geo_id=100$10000US060730210003178&-geo_id=100$10000US060730210004001&-geo_id=100$10000US060730210004004&-geo_id=100$10000US060730210004006&-geo_id=100$10000US060730210004010&-geo_id=100$10000US060730210004015&-search_results=100$10000US060730210003177&-search_results=100$10000US060730210003178&-format=&-_lang=en. Accessed December 22, 2010.

4.6 Lands and Realty

Burns & McDonnell. 2010. Corridor Conflict Analysis for the Ocotillo Express Wind Farm Project CACA-51552. Burns & McDonnell Engineering Company, Inc. July 2010.

4.7 Mineral Resources

Federal Register, 2011. Rules and Regulations. Volume 76, Number 80. Tuesday, April 26.

OE (Ocotillo Express, LLC). 2010. Ocotillo Express Wind Facility Plan of Development.

4.8 Multiple Use Classes

BLM (U.S. Bureau of Land Management). 2007a. Record of Decision, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement. September.

_____. 2007b. Final Programmatic Environmental Impact Statement, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, June. [online]: http://www.blm.gov/wo/st/en/prog/more/veg_eis.html.

4.9 Noise

Aiport-Data.com. 2011. OCA6 - Emory Ranch Airport, Ocotillo, CA. [online]: http://www.airport-data.com/airport/0CA6/. Accessed January 3, 2011.

Aspen (Aspen Environmental Group). 2011. Personal communication between Lisa Blewitt and Cassandra Garza of Aspen Environmental Group. March 25.

CPUC (California Public Utilities Commission). 2008. San Diego Gas &Electric Company's Sunrise Powerlink Project, Final Environmental Impact Report/Environmental Impact Statement. October 13. [online]: http://www.cpuc.ca.gov/environment/info/aspen/sunrise/toc-feir.htm. Accessed December 28, 2010.

____. 2011. Energy Division Resolution E-4388. January 13. [online]: http://docs.cpuc.ca.gov/published/Final_resolution/129556.htm. Accessed June 13.

Emory, Neil. 2011. Record of Conversation between Lisa Blewitt of Aspen Environmental Group and Neil Emory, Owner/Manager of the Emory Ranch Airport. January 3.

Imperial County and BLM (U.S. Bureau of Land Management). 2010a. Imperial Solar Energy Center West Draft Environmental Impact Report and Environmental Assessment, SCH #2010061037. Prepared by BRG Consulting, Inc. November. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/nepa/ isec_west.html.

_____. 2010b. Imperial Solar Energy Center South. 2010b. Draft Environmental Impact Report and Environmental Assessment, SCH #2010061038. Prepared by BRG Consulting, Inc. December. [online]: http://www.blm.gov/ca/st/en/fo/elcentro/nepa/isec_south.html.

Navcon (Navcon Engineering Network). 2011. Calculation Service, Project #102360. Performed by Hans J. Forschner. May 12. Provided in Appendix F.

Pattern (Pattern Energy Group LP). 2010a. Ocotillo Express Wind Facility Plan of Development Data Request 1. May 3.

_____. 2010b. Ocotillo Express Wind Facility Plan of Development Data Request 2. August.

_____. 2010c. Ocotillo Express Wind Facility Plan of Development Data Request 3 (Revision). December 8.

_____. 2010d. Ocotillo Express Wind Facility Plan of Development Data Request 4. December 8.

Wind Zero Group, Inc. (Wind Zero). 2010. Coyote Wells Specific Plan Document. Final Revised November 2010. [online]: http://www.icpds.com/?pid=2503 (menu) or ftp://ftp.co.imperial.ca.us/icpds/specific-plan/coyote-wells/04specific-plan-doc.pdf (document).

4.10 Paleontological Resources

Aron, G.L., and J. Kelly. 2010. Confidential paleontological assessment technical report, Ocotillo Express Wind Project: Unpublished report submitted to Aspen Environmental Group and the El Centro BLM Field Office, 47 p.

_____. 2011, Confidential paleontological survey report, Ocotillo Express Wind Project: Unpublished report submitted to Aspen Environmental Group and the El Centro BLM Field Office, 210 p.

BLM (U.S. Bureau of Land Management). 1998 (revised). Paleontology Resources Management Manual and Handbook. H-8270-1.

_____. 2007. Potential Fossil Yield Classification System: BLM Instruction Memorandum No. 2008-009 (PFYC revised from USFS, 1996).

_____. 2008. Assessment and Mitigation of Potential Impacts to Paleontological Resources: BLM Instruction Memorandum No. 2009-011.

_____. 2009. Bureau of Land Management, 2008-2009, Guidelines for Determining Paleontological Significance. [online]: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2008.Par.69083.File.dat/IM2008-009_att1.pdf.

Paleo Solutions, Inc. 2011. Email from Geraldine Aron of Paleo Solutions, Inc. to Jon Davidson of Aspen Environmental Group with subject "Re: OWEF paleo impact section". Attachments Ocotillo Express Paleo Resource Impacts Summary Table_FinalFinal.docx and OWEF 4-10_Paleontological_Resources_Reviewed-LB_GLA.docx. Received June 21.

4.11 Public Health and Safety

BLM (U.S. Bureau of Land Management), 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. June. [online]: http://windeis.anl.gov/documents/fpeis/index.cfm. Accessed December 28, 2010.

DTSC (Department of Toxic Substances Control), 2011. Cortese List: Section 65962.5(a). [online]: http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm. Accessed January 27, 2011.

EDR (Environmental Data Resources, Inc.), 2011. EDR Geocheck Report, Ocotillo Wind Power Area Study. Inquiry Number 2984393.2s. February 4, 2011.

Harding, Graham, Pamela Harding and Arnold Wilkins. 2008. Wind turbines, flicker, and photosensitive epilepsy: Characterizing the flashing that may precipitate seizures and optimizing guidelines to prevent them. Epilepsia Vol 49: 1095-1098.

Imperial County, 2011. [online]: http://www.icphd.org/sub.php?menu_id=307. Accessed on March 19, 2011.

NAA (Neil O. Anderson & Associates, Inc.), 2010. Preliminary Geotechnical Investigation, Ocotillo Express Wind Farm, Phase 1, Between Imperial Highway and Interstate [8], West of Ocotillo, California. Prepared for Pattern Energy. September 27.

Pattern (Pattern Energy Group LP), 2011. Personal communication. Email transmitted by Natalie McCue of Pattern to Jon Davidson of Aspen. January 27.

4.12 Recreation

BLM (U.S. Bureau of Land Management). 1980. The California Desert Conservation Area Plan 1980, as amended. [online]: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs.Par.aa6ec747.File.pdf/CA_Desert_.pdf. Accessed December 28, 2010.

_____. 2002. Bureau of Land Management – Environmental Assessment and Draft Plan Amendment for Western Colorado Desert Routes of Travel Designation. October 2002. [online]: http://www.blm.gov/ca/news/pdfs/weco_2002/weco2002.pdf. Accessed July 27, 2010.

4.13 Social and Economic Setting

BLM (U.S. Bureau of Land Management). 2010. Plan Amendment/Final EIS for the Genesis Energy Solar Project. [online]: http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Genesis_Ford_Dry_Lake.html. August.

CAEDD (California Employment Development Department). 2011a. El Centro Metropolitan Statistical Area. [online] http://www.calmis.ca.gov/file/lfmonth/ecen$pds.pdf. Accessed March 14.

_____. 2011b. San Diego-Carlsbad-San Marcos Metropolitan Statistical Area. [online] http://www.calmis.ca.gov/file/lfmonth/sand$pds.pdf. Accessed March 14..

McCann, Richard. 1999. A Review of the Literature on Property Value Impacts from Industrial Activities. M. Cubed (Working Paper).

4.14 Soil Resources

BLM (U.S. Bureau of Land Management). 2010. Final Environmental Impact Statement, Imperial Valley Solar Project. July.

_____. 2005. Final Wind Energy Programmatic Environmental Impact Statement. U.S. Department of Interior, U.S. BLM, Washington, D.C.

Imperial County. 2006. General Plan: Conservation and Open Space Element. Revised October.

NAA (Neil O. Anderson & Associates, Inc.). 2010. Preliminary Geotechnical Investigation, Ocotillo Express Wind Farm, Phase 1, Between Imperial Highway and Interstate [8], West of Ocotillo, California. Prepared for Pattern Energy. September 27.

OE (Ocotillo Express, LLC). 2010. Ocotillo Express Wind Facility Plan of Development Draft. October.

4.15 Special Designations

DOC (Department of Conservation). 2008. Imperial County Important Farmland 2008. Division of Land Resource Protection. Farmland Mapping and Monitoring Program.

4.16 Transportation and Public Access

BLM (U.S. Bureau of Land Management). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. FES 05-11. June. [online]: http://windeis.anl.gov/documents/ fpeis/index.cfm. Accessed December 28, 2010.

LL&G. 2011. Traffic Impact Analysis, Ocotillo Wind Energy Facility, County of Imperial, California, March 17, 2011.

4.17 Vegetation Resources

Aspen (Aspen Environmental Group). 2008. Final Environmental Impact Report/Environmental Impact Statement and Proposed Land Use Amendment, San Diego Gas and Electric Company Application for the Sunrise Powerlink Project. SCH #2006091071. DOI Control No. FES-08-54. California Public Utility Commission and U.S. Department of Interior, Bureau of Land Management. October 28.

Cal-IPC (California Invasive Plant Council). 2006. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council; Berkeley, CA. Online database. [online]: http://www.cal-ipc.org/ip/inventory/weedlist.php?region=DSon. Accessed winter 2011.

_____. *Brassica tournefortii* in the California Desert, 2005. [online]: http://www.cal-ipc.org/ip/management/plant_profiles/Brassica_tournefortii.php. (Accessed: April 14, 2011).

CDFG (California Department of Fish and Game) 2010. Hierarchical List of Natural Communities with Holland Types. September.

Gibson, A.C., M.R. Sharifi, and P.W. Rundel. 2004. Resprout characteristics of creosote bush (Larrea tridentata) when subjected to repeated vehicle damage. Journal of Arid Environments 57(4): 411–429.

Imperial County. 2009. Land Use Ordinance, Title 9, Division 10. Last amendment October 27.

_____. 1993. General Plan. [online]: http://www.icpds.com/?pid=571 Accessed Winter 2011.

Okin, G.S., B. Murray, and W.H. Schlesinger, Desertification in an arid shrubland in the southwestern United States: Process modeling and validation, in Land Degradation: Papers Selected from Contributions to the Sixth meeting of the International Geographical Union's Commission on Land Degradation and Desertification, Perth, Western Australia, 20-28 September 1999, pp. 53-70, edited by A. Conacher, Kluwer Academic Publishers, Dordrecht, 2001.

Sawyer, J.O., Keeler-Wolf, T., and J.M. Evens. 2009. A Manual of California Vegetation, 2nd Edition. California Native Plant Society, Sacramento, CA.

Sharifi, M.R., A.C. Gibson, and P.W. Rundel. 1997. Surface dust impacts on gas exchange in Mojave Desert. Journal of Applied Ecology. 34(4): 837–846.

4.18 Visual Resources

BLM (U.S. Department of the Interior, Bureau of Land Management). 1998. BLM Special Edition, Surface Management Status Desert Access Guide. California Desert District: El Centro 1:100,000 scale Topographic Map.

_____. 1997. BLM Special Edition, Surface Management Status Desert Access Guide. California Desert District: El Cajon 1:100,000 scale Topographic Map.

_____. 1986. *Visual Resource Inventory Manual H-8410-1*.

_____. 1986. *Visual Resource Contrast Rating Manual 8431*.

_____. 1984. *Visual Resource Management Manual 8400*.

_____. 1980. The California Desert Conservation Area Plan.

California Department of Transportation. 2010. State Scenic Highway System Website. [online]: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

CSP (California State Parks). 2005. Anza-Borrego Desert State Park Final General Plan and EIR. February 11, 2005.

Earthwalk Press. 2005. Anza-Borrego Desert Region Recreation Map.

Hunt, Charles B. 1974. *Natural Regions of the United States and Canada*. W.H. Freeman and Company, San Francisco.

Imperial County. 1993. General Plan, Conservation and Open Space Element. [online]: http://www.icpds.com/?pid=571 Accessed spring 2011.

Wilderness Press. 2006. Anza-Borrego Desert Region and the Yuha Desert Map.

4.19 Water Resources

B-E (Bookman-Edmonston, a Division of GIE Consultants, Inc.). 2004. Ocotillo / Coyote Wells Hydrology and Groundwater Modeling Study. Prepared for U.S. Gypsum Company. Unpublished work, January 16. [online]: ftp://ftp.co.imperial.ca.us/icpds/eir/usg/draft/26deir-appendixb-hydrology3.pdf. Accessed October 27, 2010.

BLM (U.S. Bureau of Land Management). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. June. [online]: http://windeis.anl.gov/documents/fpeis/index.cfm. Accessed December 28, 2010.

County of San Diego, 2007. Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources. Prepared by the Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. [online]: http://www.co.san-diego.ca.us/dplu/docs/GRWTR-Guidelines.pdf. Accessed May 19, 2011.

_____, 2004. Groundwater Limitations Map. April 2. [online]: http://www.sdcounty.ca.gov/dplu/docs/precip030104_small.pdf. Accessed May 23, 2011.

IID (Imperial Irrigation District). 2009a. Integrated Water Resources Management Plan, Executive Summary. [online]: http://www.iid.com/index.aspx?page=120. Accessed October 25, 2010.

_____. 2009b. Draft Final IID Plan, dated September, 2009. [online]: http://www.imperialirwmp.org/IIDReportSept09_CH1_4.pdf. Accessed January 31, 2011.

Leighton (Leighton Consulting, Inc.), 2010. Revised Hydrology and Water Quality Component for the Coyote Wells Specific Plan EIR, Ocotillo/Nomirage Community Area, Imperial County, California. January 5. [online]: ftp://ftp.co.imperial.ca.us/icpds/eir/coyote-wells/36appg-hydrology-water-quality.pdf. Accessed June 14, 2011.

NAA (Neil O. Anderson & Associates, Inc.). 2011a. Hydrological and Environmental Hazard Assessment. Ocotillo Express Wind Farm, Imperial County. February 18.

_____. 2011b. Water Supply Assessment – Ocotillo Express Wind Farm. Prepared for County of Imperial. June 8.

OE (Ocotillo Express, LLC). 2010. Ocotillo Express Wind Facility Plan of Development Draft. October.

Strong, 2011. Personal communication via electronic mail from Vida Strong of Aspen Environmental Group to Jon Davidson and Aubrey Mescher of Aspen Environmental Group. Use of IID water for Sunrise construction. April 20.

USDA Forest Service (Pacific Southwest Region), 2009. Forest Visitor Maps: Cleveland National Forest. [online]: http://www.fs.fed.us/r5/forestvisitormaps/cleveland/. Accessed March 2, 2011.

4.20 Wildland Fire Ecology

CPUC and BLM (California Public Utilities Commission and Bureau of Land Management). 2008. Final Environmental Impact Report/Environmental Impact and Proposed Land Use Amendment for the Sunrise Powerlink Project. SCH # 2006091071; DOI Control # FES-08-54. Prepared by Aspen Environmental Group for CPUC and BLM. Agoura Hills, California: Aspen Environmental Group. October.

Lipsett, Michael. 2008. *Wildfire Smoke: A Guide for Public Health Officials*. July 2008. Accessed August 4, 2009. [online]: http://oehha.ca.gov/air/risk_assess/wildfirev8.pdf

USDA (United States Department of Agriculture). 2005. Wildland Fire in Ecosystems: Effect of Fire on Soil and Water. General Technical Report RMRS-GTR-42-vol. 4. Ogden, Utah: USDA, Forest Service, Rocky Mountain Research Station. September 2005.

4.21 Wildlife Resources

Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and California Energy Commission. Washington, D.C. and Sacramento, California.

Bureau of Land Management. 2007. Final Programmatic Environmental Impact Statement, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, June. Available: http://www.blm.gov/wo/st/en/prog/more/veg_eis.html (Accessed: January 12, 2012).

CBOC (The California Burrowing Owl Consortium). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April.

CDFG (California Department of Fish and Game). 2010. Survey Protocol for Barefoot Gecko (*Coleonyx switaki*).

_____. 2004. California Rare and Endangered Reptiles.

_____. 1995. Staff Report on Burrowing Owl Mitigation.

CEC (California Energy Commission). 2007. California Guidelines for Reducing Impacts to Birds and Bats From Wind Energy Development (Final Report). October.

DeTect, Inc. 2011. Merlin™ Avian Radar Survey for the Proposed Ocotillo Wind Project. Year 1 Data Report, September 15, 2010-July 9, 2011. Prepared for Pattern Energy Group LP. September 8.

Dugan, E.A. 2011a. Barefoot Banded Gecko Report for the Ocotillo Wind Energy Project. January 7.The California Burrowing Owl Consortium (CBOC). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April.

_____. 2011b. Ocotillo Wind Energy Project Barefoot Banded Gecko Survey Report. August 29.

FTHL ICC (Flat-tailed Horned Lizard Working Group of Interagency Coordinating Committee). 2003. Flat-tailed Horned Lizard Rangewide Management Strategy 2003 Revision.

Grant, T.J. 2005. Flat-tailed Horned Lizards (*Phrynosoma mcallii*): Population Size Estimation, Effects of Off-highway Vehicles, and Natural History. Master of Science Thesis submitted to Colorado State University.

Grismer, L. Lee. 2002. Amphibians and Reptiles of Baja California. Including its Pacific Islands and the Islands in the Sea of Cortés. Berkeley: University of California Press.

HELIX (HELIX Environmental Planning, Inc.). 2010b. Ocotillo Wind Energy Project, Flat-Tailed Horned Lizard Survey Report. October 25

_____. 2010c. Ocotillo Wind Energy Project Raptor Migration Report. December 7.

_____. 2010e. Results of 2010 Burrowing Owl Surveys for the Ocotillo Wind Energy Project. December 9.

_____. 2011d. Results of Spring 2011 Raptor Migration Counts for the Ocotillo Wind Energy Projects. September 7.

_____. 2011e. Results of 2011 Burrowing Owl Surveys for the Ocotillo Wind Energy Project. August 29.

Hicks, L.L, and J.M. Elder. 1979. Human Disturbance of Sierra Nevada Bighorn Sheep. Journal of Wildlife Management 43(4): 909-915.

Imperial County. 2009. Land Use Ordinance, Title 9, Division 10. Last amendment October 27.

_____. 1993. General Plan. [online]: http://www.icpds.com/?pid=571 Accessed Winter 2011.

Johnsguard, Paul A. 1990. Hawks, Eagles, and Falcons of North America. Smithsonian Institution Press. 403 pp.

Keller, B.J., and L.C. Bender. 2007. Bighorn Sheep Response to Road-Related Disturbances in Rocky Mountain National Park, Colorado. Journal of Wildlife Management 71(7): 2329-2337.

Papouchis, C.M., F.J. Singer, W.B. Sloan. 2001. Responses of Desert Bighorn Sheep to Increased Human Recreation, Journal of Wildlife Management 65(3): 573-582.

Rahn Conservation Consulting. 2011a. Bat Surveys for Ocotillo Wind Energy Project. January.

______. 2011b. Rahn Conservation Consulting, 2011b. Memorandum to Shelby Howard, HELIX Environmental Planning, Inc. from Matt Rahn providing a summary of initial results for Ocotillo bat surveys 2010-2011. July 22.

USFWS (U.S. Fish and Wildlife Service). 2011b. Draft Eagle Conservation Plan Guidance. January.

_____. 2011c. 50 CFR Part 17 Endangered and Threatened Wildlife and Plants; Withdrawal of Proposed Rule To List the Flat-Tailed Horned Lizard as Threatened; Proposed Rule. March 15.

_____. 2010. Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities.

_____. 2010b. Section 7 Biological Conference Opinion on the Imperial Valley Solar (Solar Two) Power Plant (3031 (P) CAD000.06). September 23.

_____. 2010d. Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities.

_____. 2001. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for Peninsular Bighorn Sheep. Final Rule. February 1. 66 FR 8650 8677.

_____. 2000. Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California. U.S. Fish and Wildlife Service, Portland, OR. Xv + 251 pp.

Walter, David W., David M. Leslie, Jr., and Jonathan A Jenks. 2006. Response of Rocky Mountain Elk (*Cervus elaphus*) to Wind-power Development. *The American Midland Naturalist*, 156(2):363-375.

WRI (Wildlife Research Institute, Inc.). 2011. [Confidential] Golden Eagle Surveys Surrounding the Ocotillo Express Wind Farm Project Area in Imperial County, California. January 11.

Wilkerson, R.L., and R.B. Siegel. 2011. An Overview of Burrowing Owl in California and Several Other Western States. Presentation at the Western Raptor Symposium, Riverside, California. February 8.

Wind Turbines Guidelines Advisory Committee (WTGAC). 2010. Wind Turbines Guidelines Advisory Committee Recommendations. March 4.

4.22 Irreversible and Irretrievable Commitments of Resources

None.

4.23 Short-term Uses of Man's Environment and the Maintenance/Enhancement of Long-term Productivity

None.

4.24 Growth-inducing Impacts

None.

5. Consultation, Coordination, and Public Involvement

CDPH (California Department of Public Health). 2010. Coccidiodomycosis Yearly Summary Report. 2001 – 2009. Report generated July 2010.

CEQ (Council on Environmental Quality), 2011. Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact. Memorandum. January 14, 2011.

City of Brawley. 2011. Written communication from Rosanna Bayon Moore, Brawley City Manager, to Alan Huber, Elms Equipment Rental, Inc. (sub-contractor to Ocotillo Express LLC). October 27.

_____. 2010. City of Brawley 2010 Urban Water Management Plan. Prepared by Dynamic Consulting Engineers, Inc. Adopted June 2011.

Colby, W. David; Dobie, Robert; Leventhal, Geoff; Lipscomb, David M, McCunney, Robert J.; Seilo, Michael T.; Sondergaard, Bo. 2009. Wind Turbine Sound and Health Effects, An Expert Panel Review. http://www.awea.org/learnabout/publications/upload/awea_and_canwea_sound_white_paper.pdf

DOI (Unites States Department of the Interior). 2003. PEP- Environmental Statement Memorandum NO. ESM03-6, from Willie R. Taylor to Heads of Bureaus and Offices regarding "Procedures for Implementing Adaptive Management Practices". July, 2, 2003.

Douaud, Marine, Feve, Katia, Pituello, Fabienne, Gourichon, David, Boitard, Simon, Leguern, Eric, Coquerelle, Gerard, Vieaud, Agathe, Batini, Cesira, Naquet, Robert, Vignal, Alain, Tixier-Boichard, Michele, Pitel, Frederique. 2011. Epilepsy Caused by an Abnormal Alternative Splicing with Dosage Effect of the SV2A Gene in a Chicken Model. PLoS ONE, Volume 6, Issue 10, October.

EMKO (EMKO Environmental, Inc.). 2005. Evaluation of Hydrology and Water Quality: New Water Supply Well. Becker Properties, LLC. September 8.

EPA (United States Environmental Protection Agency). 2011b. Email communication from Jamelya Curtis of the Environmental Protection Agency, to James Dermody, Glen Hodges, and Natalie McCue of Pattern Energy. September 27.

Environmental Review Tribunal, 2011. Erickson v. Director. Ministry of the Environment. July 18. http://www.ert.gov.on.ca/files/201107/00000300-AKT5757C7CO026-BGI54ED19RO026.pdf

Harding, Graham, Pamela Harding and Arnold Wilkins. 2008. Wind turbines, flicker, and photosensitive epilepsy: Characterizing the flashing that may precipitate seizures and optimizing guidelines to prevent them. Epilepsia Vol 49: 1095-1098.

Havas, Magda and Colling, David. 2011. Wind Turbines Make Waves: Why Some Residents Near Wind Turbines Become Ill. Bulletin of Science, Technology & Society XX(X) 1-13.

Imperial County (Planning & Development Services Department). 2005. Agreement for Conditional Use Permit #05-0034 for a Commercial Water Well (Becker Properties LLC). September.

Imperial County, 1993. Imperial County General Plan Noise Element. [online] http://www.icpds.com/?pid=835.

IID (Imperial Irrigation District). 2008. IID Water Supply Assessment/Water Supply Verification Consultation Process. Communication from Tina Anderholt Shields, PE, IID Assistant Water Department Manager, to Mr. Jurg Heuberger, IID Planning Director. [online]: http://www.iid.com/index.aspx?page=159. Accessed October 26, 2010.

Israel, M., Ivanova, P., Ivanova, M. 2011. Electromagnetic fields and other physical factors around wind power generators (pilot study). Environmentalist 31: 161-168.

Knopper and Ollson, 2011. Health Effects and Wind Turbines: A Review of the Literature. Environmental Health 10:78.

Lenzen, M. 2008. Life cycle energy and greenhouse gas emissions of nuclear energy: A review. Energy Conversion and Management 49, 2178-2199.

NAA (Neil O. Anderson & Associates, Inc.). 2011b. Water Supply Assessment – Ocotillo Express Wind Farm. Prepared for County of Imperial. June 8.

O'Neal, Robert D., Hellweg, Robert D., Jr., Lampeter, Richard M. 2011. Low frequency noise and infrasound from wind turbines. Noise Control Engineering Journal 59(2), March-April 2011.

Pattern (Pattern Energy). 2011. Potential Water Sources During Construction. September 26.

Pederson, E. 2011. Health Aspects Associated with Wind Turbine Noise—Results from Three Field Studies. Noise Control Engineering Journal 59:47-53.

Pederson and Persson Waye, 2007. Wind Turbine Noise, Annoyance and Self-Reported Health and Well Being in Different Living Environments. Journal of Occupational and Environmental Medicine 64:480-486.

Salt and Hullar, 2010. Responses of the Ear to Low Frequency Sounds, Infrasound and Wind Turbines. Hearing Research 268:12-21.

San Diego County, 2010. General Plan Update Groundwater Study. Appendix E: Pine Valley Cumulative Groundwater Study. April. [online]: http://www.sdcounty.ca.gov/dplu/gpupdate/docs/BOS_Aug2011/EIR/Appn_D_GW_Appendices.pdf. Accessed October 22, 2011.

Schlesinger, W. 2009. On carbon sequestration in desert ecosystems. Global Change Biology 15, 1488-1490.

Smedley et al. 2010. Potential of Wind Turbines to Elicit Seizures under Various Meteorological Conditions. Epilepsia 51:1146-1151.

9. INDEX

—A—

404(b)(1) Analysis 1-4, 1-7,1-13, 1-15, 1-16

Aircraft Operations 3.12-1, 4.11-1, 4.11-2, 4.11-5, 4.11-10, 14, 4.11-21, 4.11-23, 4.11-25, 4.11-26, 4.11-27, 4.11-30, 4.11-33, 4.11-35

Area of Potential Effect (APE) 5-9, 5-10, 5-11, 5-12, 5-14, 5-16, 5-20, 5-22, 5-23, 5-66, 5-69

Area of Critical Environmental Concern (ACEC) 1-5, 1-7, 2-47, 3-1, 3.1-1, 3.13-1, 3.13-2, 3.13-3, 3.13-4, 3.15-2, 3.16-1, 3.16-2, 3.16-4, 3.18-1, 3.19-2, 3.19-8, 3.23-1, 4.15-1, 4.15-2, 4.15-3, 4.15-4, 4.15-5, 4.15-6, 5-23

Army Corps of Engineers (ACOE) 1-4, 1-7, 2-42, 3.18-24, 3.18-25, 3.18-26, 3.18-27, 3.18-30, 3.20-7, 3.20-8, 3.20-17, 3.20-21, 3.23-28, 4.11-42, 4.17-8, 4.17-9, 4.17-10, 4.17-11, 4.17-12, 4.17-13, 4.17-14, 4.17-15, 4.17-16, 4.17-17, 4.17-27, 4.19-2, 4.19-13, 4.19-22, 4.19-63, 5-6, 5-7, 5-11, 5-21, 5-36, 5-66

Average Daily Traffic (ADT) 3.10-10, 3.17-2, 3.17-3, 4.16-2, 4.16-5, 4.16-9, 4.16-12, 4.16-19

Avian and Bat Protection Plan (ABPP) 2-20, 4.21-42, 4.21-46, 4.21-50, 5-40

—B—

Best Management Practice (BMP) 1-5, 2-20, 2-24, 2-34, 3.20-16, 4.9-5, 4.9-25, 4.11-9, 4.11-37, 4.11-38, 4.14-18, 4.16-21, 4.19-2, 4.19-9, 4.19-28, 4.19-62, 4.19-63, 4.20-4, 5-24

Biological Assessment (BA) 1-8, 3.18-27, 3.23-28, 5-8

—C—

California Desert Conservation Area (CDCA) 1-1, 1-3, 1-6, 1-9, 1-11, 1-12, 2-1, 2-2, 2-26, 2-29, 2-30, 2-31, 2-32, 3.1-1, 3.6-1, 3.6-3, 3.6-4, 3.8-4, 3.9-1, 3.9-2, 3.10-11, 3.13-1, 3.13-4, 3.13-5, 3.15-6, 3.16-3, 3.18-3, 3.18-28, 3.19-3, 3.19-4, 3.19-5, 3.19-6, 3.19-8, 3.19-9, 3.23-29, 4.1-20, 4.1-22, 4.1-23, 4.2-14, 4.2-15, 4.3-7, 4.3-8, 4.6-2, 4.6-3, 4.6-4, 4.6-5, 4.6-7, 4.6-8, 4.7-10, 4.8-1, 4.8-2, 4.8-3, 4.8-4, 4.8-5, 4.8-8, 4.8-9, 4.8-10, 4.9-18, 4.10-7, 4.10-8, 4.10-9, 4.11-28, 4.11-29, 4.12-2, 4.12-5, 4.12-6, 4.15-1, 4.15-6, 4.15-7, 4.16-16, 4.16-17, 4.17-18, 4.18-2, 4.21-33, 4.21-34, 5-7, 5-18, 5-27, 5-27

California Endangered Species Act (CESA) 1-8, 1-14, 3.18-29, 3.18-30, 3.23-11, 3.23-31, 5-7

Clean Water Act (CWA) 1-4, 1-7, 1-13, 1-15, 1-16, 3.12-9, 3.12-10, 3.18-24, 3.18-26, 3.18-27, 3.18-30, 3.18-30, 3.18-31, 3.20-1, 3.20-8, 3.20-16, 3.20-17, 3.20-21, 4.8-2, 4.14-7, 4.14-11, 4.17-1, 4.17-8, 4.19-2, 4.19-13, 4.19-14, 4.19-56, 4.19-63, 5-6

Criteria Pollutant Emissions 4.2-2, 4.2-4, 4.2-6, 4.2-9, 4.2-10, 4.2-12, 4.2-13

—D—

Department of Defense (DOD) 1-15, 2-18, 2-47, 3.11-4, 3.12-1, 4.11-5, 4.11-40, 4.11-42, 5-6, 5-23

Department of Energy (DOE) 1-10, 1-16, 4.1-16, 5-11, 5-22, 5-66

—E—

Eagle Conservation Plan (ECP) 2-20, 3.23-31, 4.21-6, 4.21-14, 4.21-15, 4.21-19, 4.21-40, 4.21-42, 4.21-46, 4.21-50, 5-40

Electromagnetic Fields (EMF) 3.12-4, 3.12-7, 3.12-8, 4.11-13, 4.11-39, 4.13-2, 4.13-5, 5-23, 5-25

Endangered Species Act (ESA) 1-8, 1-13, 1-14, 3.7-1, 3.18-12, 3.18-13, 3.18-20, 3.18-27, 3.18-28, 3.18-29, 3.18-30, 3.23-3.23-2, 11, 3.23-26, 3.23-28, 3.23-31, 4.1-3, 4.8-5, 5-8, 5-68

Environmentally Superior Alternative 2-45

Erosion 4.1-23, 4.14-2, 4.14-3, 4.14-7, 4.14-11, 4.14-18, 4.14-19, 4.19-12, 4.19-14, 4.19-15, 4.19-16, 4.19-29, 4.19-30, 4.19-31, 4.19-40, 4.19-

41, 4.19-42, 4.19-63, 4.19-67, 4.19-68, 4.20-2, 5-31, 5-38

—F—

Federal Aviation Administration (FAA) 1-15, 2-3, 2-9, 2-17, 3.12-1, 3.12-10, 3.22-8, 4.11-1, 4.11-5, 4.11-10, 4.11-14, 4.11-16, 4.11-30, 4.11-33, 4.11-35, 4.11-38, 4.11-39, 4.11-40, 4.11-42, 4.18-18, 4.21-50

Federal Land Policy and Management Act (FLPMA) 1-3, 1-7, 1-9, 1-12, 1-16, 3.6-3, 3.6-4, 3.7-1, 3.11-1, 3.11-3, 3.11-4, 3.13-4, 3.15-5, 3.19-1, 4.6-2, 4.6-5, 4.7-3, 4.8-5, 5-6, 5-19, 5-20

—G—

Greenhouse Gas (GHG) 1-4, 1-5, 1-8, 2-30, 2-32, 2-38, 2-46, 3.3-1, 3.3-2, 3.3-3, 3.3-4, 3.3-5, 4.3-1, 4.3-2, 4.3-3, 4.3-4, 4.3-5, 4.3-6, 4.3-7, 4.3-8, 4.3-9, 5-18, 5-28, 5-29, 5-37, 5-42, 5-43, 5-45, 5-46, 5-47, 5-48, 5-49, 5-52, 5-53, 5-55, 5-58, 5-60, 5-63

Ground Vibration 4.9-5, 4.9-10

Groundwater 2-13, 3.20-2, 3.20-4, 3.20-6, 3.20-8, 3.20-9, 3.20-10, 3.20-11, 3.20-12, 3.20-13, 3.20-14, 3.20-15, 3.20-20, 3.20-22, 3.20-23, 4.19-3, 4.19-4, 4.19-6, 4.19-8, 4.19-9, 4.19-15, 4.19-17, 4.19-20, 4.19-27, 4.19-28, 4.19-31, 4.19-33, 4.19-38, 4.19-42, 4.19-44, 4.19-51, 4.19-52, 4.19-53, 4.19-55, 4.19-58, 4.19-60, 4.19-64, 4.19-65

—H—

Habitat Conservation Plan (HCP) 3.18-28, 3.23-29, 4.17-1, 4.21-1

Hazardous Air Pollutant Emissions 4.2-4, 4.2-6, 4.2-10, 4.2-11, 4.2-12, 4.2-13

Hazardous Materials 2-13, 3.12-2, 3.12-8, 3.12-9, 3.12-10, 3.12-11, 3.12-12, 3.12-13, 3.12-14, 3.12-16, 3.20-22, 3.22-6, 4.11-1, 4.11-3, 4.11-7, 4.11-11, 4.11-14, 4.11-22, 4.11-23, 4.11-24, 4.11-25, 4.11-26, 4.11-27, 4.11-31, 4.11-33, 4.11-35, 4.19-19, 4.19-23, 4.19-32, 4.19-43, 5-41

—I—

Imperial Co. Air Pollution Control District (ICAPCD) 1-15, 1-16, 2-38, 3.2-2, 3.2-5, 3.2-7, 3.2-8, 3.2-9, 3.3-5, 4.2-1, 4.2-2, 4.2-3, 4.2-4, 4.2-5, 4.2-6, 4.2-7, 4.2-8, 4.2-9, 4.2-10, 4.2-12, 4.2-13, 4.2-16, 4.2-18, 4.2-19, 4.2-20, 4.2-21, 4.2-22, 4.2-23, 4.3-1, 5-7, 5-10, 5-30, 5-32, 5-33

—K—

Key Observation Point (KOP) 3.19-3, 3.19-4, 3.19-5, 3.19-6, 3.19-7, 3.19-8, 4.18-1, 4.18-3, 4.18-4, 4.18-5, 4.18-6, 4.18-7, 4.18-8, 4.18-9, 4.18-10, 4.18-11, 4.18-18, 5-65

—L—

Level of Service (LOS) 2-41, 3.17-2, 3.17-3, 4.16-1, 4.16-2, 4.16-8, 4.16-9, 4.16-10, 4.16-11, 4.16-12, 4.16-13, 4.16-14, 4.16-15, 4.16-16, 4.16-17, 4.16-19, 4.16-20

—M—

Meteorological Towers 2-9, 2-28, 2-29, 4.17-21

Migratory Bird Treaty Act (MBTA) 3.23-30, 4.21-6, 4.21-12

—N—

National Historic Preservation Act (NHPA) 1-13, 1-16, 4.1-3, 5-7, 5-8, 5-10, 5-13, 5-13, 5-14, 5-15, 5-65, 5-69

National Pollutant Discharge Elimination System (NPDES) 1-16, 3.18-26, 3.20-16, 4.19-2, 4.19-63, 5-20

National Register of Historic Places (NRHP) 1-14, 2-38, 4.8-2, 5-66, 5-68, 5-9, 5-10, 5-12, 5-19, 5-66

Native American Heritage Commission (NAHC) 1-16, 5-10, 5-11

Notice of Intent (NOI) 1-2, 4.1-7, 4.1-19, 4.1-20, 4.15-7, 5-7, 5-8, 5-10

Notice of Preparation (NOP) 1-2, 1-18, 4.1-8, 5-7, 5-8

—O—

Off-Highway Vehicle (OHV) 1-7, 3.6-1, 3.6-2, 3.6-4, 3.9-1, 3.10-8, 3.16-1, 3.16-2, 3.17-4, 3.18-1, 3.18-13, 3.18-21, 3.18-22, 3.18-23, 3.23-1, 4.1-19, 4.1-23, 4.6-2, 4.6-4, 4.6-5, 4.8-5, 4.8-9, 4.9-19, 4.9-20, 4.12-2, 4.12-3, 4.12-7, 4.12-8, 4.12-11, 4.15-2, 4.15-3, 4.15-9, 4.16-9, 4.16-10, 4.19-51, 4.21-10, 4.21-21

Occupational Safety and Health Administration (OSHA) 2-9, 2-21, 2-33, 3.10-10, 3.10-11, 3.10-12, 3.12-10, 3.12-13, 3.13-1, 3.13-2, 3.13-3, 3.13-4, 3.13-5, 4.9-7, 4.11-18, 4.11-19, 4.11-20, 4.11-21, 4.11-39, 4.11-41

—P—

Plan of Development (POD) 2-1, 3.8-1, 3.8-2, 4.1-7, 4.1-8, 4.1-15, 4.7-1, 4.8-4, 4.9-21, 4.11-5, 4.11-8, 4.14-1, 4.14-2, 4.14-5, 4.16-5, 4.19-1, 4.19-5, 4.19-11, 4.19-13, 4.19-16, 4.19-18, 4.19-19, 4.19-21, 4.19-22, 4.19-23, 4.19-60, 5-10

Preferred Alternative 2-45

Programmatic Environmental Impact Statement (PEIS) 1-10, 2-10, 4.8-4

—R—

Regional Water Quality Control Board (RWQCB) 1-16, 2-22, 3.12-12, 3.18-27, 3.20-1, 3.20-3, 3.20-5, 3.20-8, 3.20-11, 3.20-16, 3.20-17, 3.20-20, 3.20-21, 4.17-8, 4.17-11, 4.17-27, 4.19-2, 4.19-63, 4.19-64, 4.19-66, 4.19-67, 5-10, 5-36, 5-38, 5-43, 5-59,

Riparian 4.8-6, 4.17-21, 4.17-22, 4.21-38

—S—

Salton Sea Air Basin (SSAB) 3.2-2, 3.2-3, 3.2-5, 4.2-16

San Diego Gas and Electric (SDG&E) 1-5, 1-16, 2-3, 2-5, 2-6, 2-7, 2-8, 2-14, 2-16, 2-17, 2-19, 2-20, 2-24, 2-25, 2-26, 2-46, 3.6-2, 4.1-8, 4.1-14, 4.1-15, 4.1-16, 4.1-17, 4.1-21, 4.1-22, 4.1-23, 4.1-24, 4.2-17, 4.2-18, 4.3-3, 4.5-4, 4.6-3, 4.6-9, 4.6-10, 4.8-10, 4.8-11, 4.9-

20, 4.9-21, 4.9-22, 4.9-23, 4.9-24, 4.12-8, 4.12-9, 4.13-12, 4.15-10, 4.17-20, 4.19-53, 4.19-54, 4.20-8, 4.21-35, 4.24-2

Scoping 3.3-4, 4.1-11, 4.1-13, 4.3-4, 5-7, 5-8

Seismic Hazards 3.12-2, 3.12-8, 3.15-6, 4.11-1, 4.11-2, 4.11-6, 4.11-11, 4.11-14, 4.11-22, 4.11-23, 4.11-24, 4.11-25, 4.11-26, 4.11-27, 4.11-31, 4.11-33, 4.11-35

Shadow Flicker 3.12-6, 4.11-12, 5-23

Sole Source Aquifer (SSA) 2-11, 3.20-2, 3.20-8, 3.20-9, 3.20-11, 3.20-15, 4.1-24, 4.19-7, 4.19-17, 4.19-50, 4.19-51, 4.19-52, 4.19-53, 4.19-64, 4.19-6, 4.19-7, 4.19-8, 4.19-9, 4.19-17, 4.19-18, 4.19-27, 4.19-28, 4.19-33, 4.19-38, 4.19-44, 4.19-49, 4.19-50, 4.19-51, 4.19-52, 4.19-53, 4.19-54, 4.19-55, 4.19-59, 4.19-60, 4.19-61, 4.19-64, 5-42, 5-44, 5-46, 5-60, 5-44, 5-45, 5-52, 5-53, 5-54, 5-55, 5-59, 5-60, 5-61

Spill Prevention Containment and Countermeasure (SPCC) Plan 2-21, 3.12-9, 3.12-10, 3.12-12, 4.19-15, 5-41

State Water Resources Control Board (SWRCB) 1-16, 3.12-12, 3.12-13, 3.18-30, 3.20-1, 3.20-16, 3.20-17, 3.20-20, 4.19-67

State Historic Preservation Office (SHPO) 1-14, 1-16, 4.8-2, 5-9, 5-10, 5-11, 5-15, 5-17, 5-66, 5-67, 5-68, 5-69, 5-9, 5-66, 5-68

Storm Water Pollution Prevention Plan (SWPPP) 1-16, 2-22, 3.18-30, 3.20-16, 4.14-2, 4.14-3, 4.14-7, 4.14-11, 4.14-19, 4.19-2, 4.19-12, 4.19-13, 4.19-14, 4.19-15, 4.19-29, 4.19-30, 4.19-40, 4.19-41, 4.19-56, 4.19-63, 4.19-67, 4.19-68, 5-38

Sunrise Powerlink (SPL) 1-5, 1-6, 2-6, 2-7, 2-8, 2-19, 2-24, 2-27, 2-46, 2-48, 3.6-2, 3.10-5, 3.10-7, 3.12-7, 3.16-1, 3.19-5, 3.19-7, 3.23-27, 4.1-8, 4.1-16, 4.1-21, 4.1-22, 4.1-23, 4.1-24, 4.2-16, 4.2-17, 4.2-18, 4.2-20, 4.2-21, 4.5-4, 4.5-5, 4.6-3, 4.6-5, 4.6-9, 4.6-10, 4.8-3, 4.8-10, 4.9-20, 4.9-21, 4.9-22, 4.9-23, 4.9-24, 4.11-13, 4.12-8, 4.13-12, 4.13-13, 4.13-14, 4.13-15, 4.14-15, 4.14-16, 4.14-17, 4.15-10, 4.17-20, 4.17-21, 4.17-23, 4.17-25, 4.18-4, 4.18-14, 4.18-16, 4.19-53, 4.19-54, 4.19-56, 4.19-57, 4.19-58, 4.20-8, 4.20-9, 4.21-

13, 4.21-35, 4.21-38, 4.21-39, 4.21-41, 4.21-46, 4.24-2

—U—

U.S. Environmental Protection Agency (USEPA) 1-4, 1-13, 1-16, 3.2-2, 3.2-4, 3.2-6, 3.2-8, 3.2-9, 3.3-2, 3.5-3, 3.10-5, 3.10-10, 3.12-9, 3.12-11, 3.18-25, 3.20-8, 3.20-16, 3.20-17, 4.2-3, 4.2-23, 5-10, 5-44, 5-60

U.S. Fish and Wildlife Service (USFWS) 1-8, 1-13, 1-15, 1-16, 2-36, 3.11-4, 3.18-27, 3.18-28, 3.18-29, 3.23-2, 3.23-4, 3.23-7, 3.23-9, 3.23-10, 3.23-11, 3.23-24, 3.23-25, 3.23-26, 3.23-27, 3.23-28, 3.23-29, 3.23-30, 3.23-31, 4.1-3, 4.8-4, 4.8-5, 4.11-42, 4.17-1, 4.17-8, 4.17-26, 4.21-1, 4.21-8, 4.21-9, 4.21-13, 4.21-15, 4.21-20, 4.21-24, 4.21-26, 4.21-28, 4.21-29, 4.21-31, 4.21-32, 4.21-34, 4.21-36, 4.21-38, 4.21-41, 4.21-43, 4.21-45, 4.21-46, 4.21-47, 4.21-48, 4.21-49, 4.21-50, 4.21-51, 5-8, 5-39, 5-40

—V—

Visual Resource Management 2-10, 3.19-1

—W—

Water Supply Assessment (WSA) 2-11, 3.20-18, 3.20-19, 3.20-20, 4.19-10, 4.19-18, 4.19-21, 4.19-28, 4.19-33, 4.19-39, 4.19-44, 5-54, 5-61, 5-62, 5-63

Waters of the U.S. 1-7, 3.18-24, 3.18-25, 3.20-7, 3.23-28, 4.17-8, 4.17-9, 4.17-19, 4.17-21, 4.17-22, 4.17-24, 4.19-22

Weeds 3.18-9, 3.18-10, 4.17-10

Wetlands 3.20-4, 4.17-9

Wilderness Area (WA) 3.1-1, 3.10-8, 3.12-3, 3.13-1, 3.13-2, 3.13-3, 3.16-3, 3.16-4, 3.18-1, 3.19-2, 3.23-1, 3.23-2, 4.2-7, 4.9-4, 4.9-7, 4.9-11, 4.9-13, 4.9-14, 4.15-1, 4.15-2, 4.15-3

Wind Turbine Syndrome 3.12-6, 4.11-2, 4.11-13, 5-26